THE Soybean Digest

REG. U. S. PAT. OFF.

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EDITOR'S DESK

HERE'S A NICKEL TAKE 'EM AWAY!

FREDERICK, OKLA.—A grocery store ran this advertisement in a Frederick newspaper:

"We can't pull rabbits out of a hat or change your home to a castle, but we can pay you 5 cents a can to come carry these durn soybeans away. A genuine 5 cent piece, U. S. standard mint, is taped to every can of these soybeans. We can't sell 'em and we can't give 'em away. So-o-, we will pay you 5 cents per can to come and get 'em."

No More of This The above clipping was taken from an advertisement in one of the newspapers serving a southwestern state. Unfavorable as it is to soybeans, we call it to your attention for a specific reason.

Too many attempts to capitalize on the soybean name have ended in the same type of fiasco. Too many field varieties of soybeans have been canned, and improperly at that, and placed on the market. They not only fail to sell, but they give a black eye to all canned soys. They make it hard or impossible to merchandise worthy products when placed on the market. Canners of the vegetable varieties who exercise care in their operations and market a most creditable product find their markets jeopardized by those who attempt to capitalize on the supposed magic of the soybean name.

The eating habits of the American public are not changed rapidly. Primary requisite of a new product when placed on the market must be a combination of pleasing taste and palatability. Mr. Average Man must like a product or he does not make repeat purchases. Care and forethought must be used in preparation and marketing.

Let's be sure that *all* soybean food products are good before placing them on the market. Let's have no more sales like the above. Let's be sure the industry builds soundly as we go into the postwar era.

It is with that thought in mind that we bring you the story on the canning of soybeans which is carried in this issue on page 8.

How to Get More Soys Officials of the Production and Marketing Administration are to be commended on their recent action. An increase in the ceiling price of soybeans was recommended by the Secretary of Agriculture, approved by the OPA and placed in effect before the crop was all in the hands of buyers!! Such early action has not always been forthcoming from governmental agencies, and the persons responsible for this move are to be congratulated. A ceiling price of $2.25 per bushel on U.S. No. 2 beans with 14 percent moisture is somewhat better than the former figure. The increase is appreciated by every soybean grower.

While making the above commendation, we would like to point out to those same officials that if they are sincere in their desire to obtain 1 million more acres of soybeans in 1947, there is one sure way to get them — pay for them!

An increase in the support price on the 1947 crop beans would secure the desired acreage very easily. We know of no other way of securing that increase in soybeans. The trend is toward greater acreages in grasses, clovers, and other soil building crops. The war years have drawn heavily on our soils. Plant nutrient supplies have been depleted rapidly. Unless assured of a price that will compare with that of corn, on a per acre basis, the cultivated acreage of 1947 will go largely into corn.

Soybeans should bring, on the average, approximately two and one-fourth times the price of corn, on a bushel basis, to be comparable in per acre returns. The proposed $2.04 figure does not add up that way.

Another Soy Publication For some time your editors have been boasting that the *Soybean Digest* is the only publication in the world devoted exclusively to soybeans.

But now the *Revue Internationale du Soja*, published in Paris and edited by E. V. Letzgus, has come to our desk. As described on its cover, it is a "monthly organ of information and of scientific, agronomic, industrial and economic documentation and of popularization to encourage and develop the culture of soya."

It appears that the *Revue Internationale* was established in 1941 and so is just a year younger than the *Digest*. But since this was during the German occupation there was little communication with France at the time. It is only during recent months that we have begun to hear from our fellow enthusiasts across the water, and to learn that an almost feverish interest in soybeans developed during the war years in parts of Europe.



The *Revue* is a 32-page publication and although our knowledge of French is somewhat sketchy, appears to be a well edited magazine.

Articles in the March issue include. "Where to locate Soybean Industries in Metropolitan France," "The Plant Which Gives Milk," "The Failure of Soybean Culture," and "The Flour or Soy Milk—Animal Milk and Arteriosclerosis."

Listed in its pages are two French associations. Societe Francaise des Produits du Soja, and Societe Soya, as well as a number of books on soybeans. This indicates a wide interest in soybeans in France, even through their culture has not been too successful as yet.

Our salute to a sister publication abroad. May her efforts in behalf of the soybean be fruitful.



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In achieving recognition as a leader in its field, NOD-O-GEN inoculator has compiled an enviable record for top performance under widely varying conditions on many varieties of legumes.

The folks at Dickinson's Farm Laboratory Division jealously guard the high standard of quality which has earned NOD-O-GEN its pre-eminent position of leadership. Strict attention to minutest detail in the production of NOD-O-GEN pays off in uniformity of product and dependability of result.

There are special potent strains of pre-tested NOD-O-GEN for each legume. Order your 1947 requirements now with complete assurance of satisfaction for your customers and a good margin of profit for yourself.

Legume planting will be high again next year. Be the "Leader" in your locality with an adequate stock of NOD-O-GEN.

ALL FROM ONE SOURCE

The Farm Laboratory Division handles many other products of scientific research for better farming . . . each a leader in its own right. Increasing emphasis on sound production methods makes these items good ones for you to handle. Consumer publicity has created and will continue to build a demand for these modern aids to better farming. Check the list and order when you book your NOD-O-GEN for Spring shipment.

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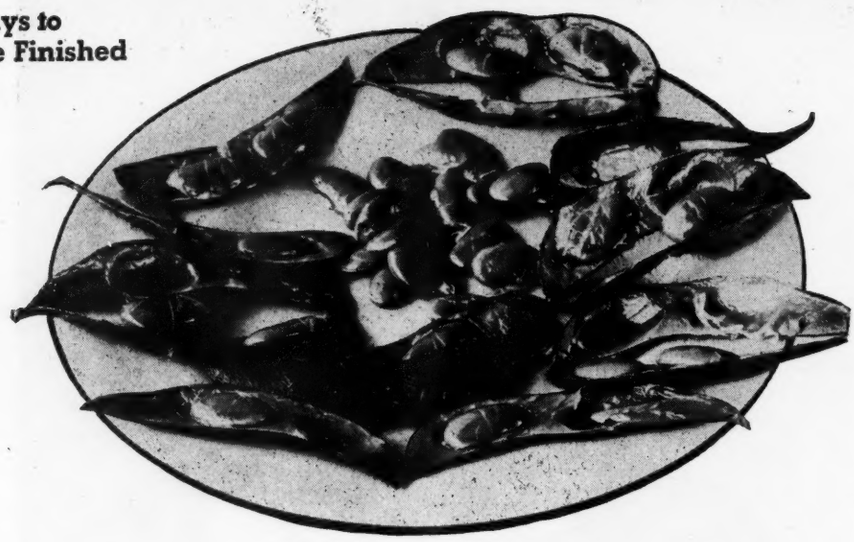
Farm Laboratory Division

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The Crop and Profit "Pepper Upper"

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STUDIES OF

Canned Vegetable Soybeans

THE VEGETABLE soybean canning industry has been growing in importance during recent years. Canned soybeans are now being widely distributed.

The nutritive value of the product is beyond question. Food specialists generally recommend them, particularly as a cheap source of protein, fat and of some vitamins and minerals.

But reports vary concerning their public acceptance. Some people like the canned green soys better than other canned vegetables. Others don't—decidedly.

The reason? There is unquestionably a wide variation in the quality of the finished product.

Dr. W. J. Morse of the Bureau of Plant Industry says unsatisfactory results in commercial canning are largely caused by using field varieties, allowing the beans to become too mature before processing, and incorrect processing.

There is also a tendency of the liquor surrounding the beans to gel and become cloudy in the can, which detracts from their appearance. The gel may disappear on heating but most consumers consider it undesirable.

Such conditions must be corrected and a standardized product prepared before commercially canned green soybeans will receive a wide and dependable public acceptance.

Considerable work has been done at the Maryland Agricultural Experiment Station on this problem.

The purpose of the work was to determine:

1. The nutritive value of canned soybeans as influenced by varieties, length of storage, maturity of the raw product and methods of preparation and processing.

2. The nature of the gel-forming substance and methods of preventing its formation in the can.

The results of the investigations are published in *Maryland Bulletin A39.* Authors are Amihud Kramer, C. H. Mahoney, Elizabeth Stephens and Agnes L. Marks. The following information is taken from that bulletin.

The soybeans were harvested as nearly as possible at the same stage of maturity. Best stage is considered to be when the lower leaves of the plants begin to turn yellow and there is an occasional yellow bean among the green leaves. The soybeans were then vined, washed, hand-picked, blanched at 190 degrees F. for 10 minutes, cooled to about 105 degrees F., and put into No. 1 cans. Hot 3 percent brine was added, the cans were closed, processed for 40 minutes at 240 degrees F., and cooled promptly.

VARIETAL DIFFERENCES

Samples of soybeans canned in 1941, 1942, 1943, and 1944, were analyzed in October 1944. Varieties canned were Willomi, Emperor, Bansei and Giant Green. All of the samples were prepared by Dr. E. P. Walls of the Maryland Station.

No outstanding differences were found among the four varieties. Emperor appears to be somewhat higher in protein and calcium, and lower in carbohydrates. Giant Green is slightly lower in protein and higher in carbohydrates.

LENGTH OF STORAGE

The authors found indications that a large portion of the thiamin content of canned soybeans is lost in storage. The carotene content of canned soybeans is also reduced.

On the other hand, with the possible exception of calcium, storage for as long as 3 years seems to have little effect on the mineral composition of the drained portion of canned soybeans.

STAGE OF MATURITY

Stage of maturity had a decided effect on the composition of canned soybeans. There was a 3 percent drop in moisture when dry soybeans were used for canning. The calcium content remained rather constant during the green stage, but decreased from about 63 to 41 milligrams per 100 grams at the dry stage.

Protein, fat, fiber, phosphorus and iron showed some increase until optimum maturity was reached, but began to decrease with increasing maturity beyond that point. Ascorbic acid and carotene showed a similar relation to maturity, and had disappeared completely in the dry stage.

The carbohydrate content, on the other hand, increased continuously with increased maturity from less than 4 percent at the

pre-optimum stage, to 11 percent at the dry stage. The thiamin content remained rather constant for all stages.

BLANCHING, PROCESSING

To test the effect of blanching and processing, soybeans of the Emperor variety were harvested and canned according to the usual procedure, with the following exceptions. The raw product was separated into four lots. One lot was not blanched, and the others were blanched 2, 5 and 10 minutes respectively. After the cans were closed, one-half were processed for 40 minutes at 240 degrees F., and the remaining cans were processed for 25 minutes at 250 degrees F.

It appears that the higher temperature for a shorter length of time resulted in a higher moisture, ash and thiamin content and lower protein, carbohydrate and phosphorus content than the longer process. With an increase in blanching time there was a small, gradual decrease in all the proximate constituents except fibre. This was also true of the phosphorus, ascorbic acid and thiamin.

Since it is known that considerable portions of the nutrients of canned products may be leached into the liquor, the liquid portions of the cans prepared for the blanching and processing tests were analyzed also. Analyses were not made for fat and fibre, since they are not water soluble.

The total ash constituents are largely soluble and are found in the liquor in about the same concentration as in the solids. However, the ash is largely composed of table salt added in the brine.

Calcium and phosphorus are only partially soluble, for their concentration in the liquor is only about one-third their concentration in the beans. Iron appears to be more readily soluble. A larger portion of iron is found in the liquor.

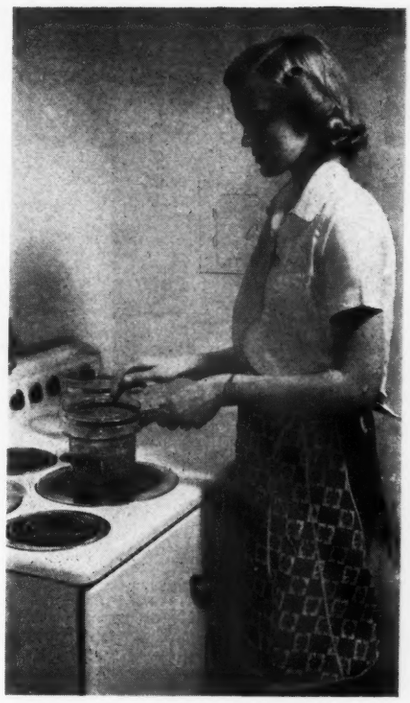
Proteins are leached into the liquor to a much lesser degree than the carbohydrates. Only about 7 percent of the protein is found in the liquid, but over 20 percent of the carbohydrates are dissolved.

In general the authors found that the canned green beans compared favorably with the cooked fresh product. Canned, drained beans were somewhat lower in some nutrients, but in most of these the difference was to be found in the liquor.

FORMATION OF THE GEL

By elimination of other possibilities, the authors concluded that the gel-forming substance in the liquor is a gum. Like other gums, it is composed largely of pentoses, hexoses and uronic acids.

They suggest that methods of preventing gel formation may be limited to diluting or precipitating the gum, or of choosing a raw soybean low in gum. The following precautions are offered to avoid gel formation:



The gel in the liquid disappears on heating but housewives don't like it.

1. Use green, immature soybeans, since the mature beans tend to gel.
2. Choose a variety that does not gel easily.
3. Do not overfill the can.
4. Use a relatively long blanch.

The addition of some calcium or magnesium salt will tend to prevent gel formation. But since such chemicals may impart a bitter taste and give the soybeans a hard texture, their use is not recommended.

Concerning the effect of blanching on nutrition and quality, the authors observe: "Since blanching tends to leach some of the nutrients from the soybean, it is obvious from the *nutritive* standpoint that soybeans should not be blanched before they are canned.

"From the quality standpoint, however, best results are obtained when soybeans are blanched at least 5 minutes, preferably 10. The long blanch results in a clear liquor, better color, and elimination of the fishy, oily flavor to which many consumers object.

"It is unlikely, therefore, that the blanching treatment will be dispensed with in commercial practice (although a 5-minute blanch may be a good compromise)."

Editor's note: For further information on the work at the Maryland Station, see "Edible Soybeans," by Dr. E. P. Walls in April 1945 issue of the SOYBEAN DIGEST.

—s b d—

JAPS USE SOYBEANS IN AN INSECTICIDE

Development of a substitute insecticide by the Japanese during the war to replace the mixture of kerosene and pyrethrum used for the control of rice leafhoppers was disclosed in the June report of General MacArthur to the War Department on non-military activities in Japan.

The report said that the substitute was found and patented in 1943 after kerosene became increasingly scarce in 1941. Commonly referred to as ethyl ester, the insecticide is also, known as "soybean fatty acid sulfonated ethyl ester" and "linoric acid ethyl ester." Basic raw materials for manufacture are alcohol, soybeans and coal. The report also commented as follows:

"For leafhopper control in rice paddies, the ester is applied by a man with a drop can walking down every fourth row of rice applying the undiluted ester to the water surface. Others brush the rice causing the leafhoppers to jump to the surface of the water where they are killed by the ester. The ethyl ester is used alone. It is non-injurious to foilage. This insecticide has also proved to be effective against the larva of a trichopterous rice pest in Hokkaido."

—s b d—

AMINO ACIDS AND SOYBEAN OIL MEAL

The following is from "New Horizons in Animal Nutrition and Farm Chemurgy," by Dr. H. J. Prebluda, U. S. Industrial Chemicals, Inc., in the *Chemurgic Digest*:

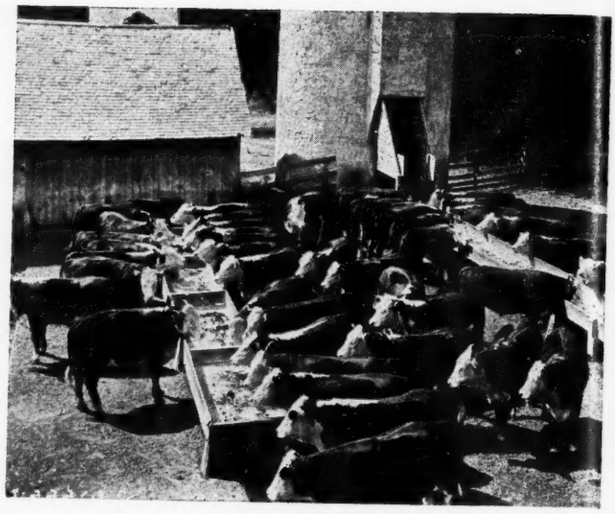
"It has been shown that amino acids play a role in stimulating the bacterial flora of the stomach of farm animals, and here, too, is an example of an inter-relationship where an amino acid may stimulate bacteria to grow, and these in turn will produce some growth vitamin which could not have been otherwise made available. Some work on the use of synthetic urea in rations for lambs was unsuccessful until a sulfur amino acid, such as methionine, was added. This addition actually did something to the bacterial synthesis, so that there was a decided increase in the weight gains of the experimental animals.

"The sulfur amino acids seem to be very important in animal nutrition. People have avoided trying them in feeds because of their exorbitant price. However, it will not be long before these costs will be within the practical range for use in specialty feeds. Several years ago the price of methionine was close to $400 per pound. At present, it is selling for about $10 per pound.

"Should low-cost methionine be made available in the next few years, it is predicted that some real "supercharger" feed concentrates could be made available, using perhaps, soybean oil meal as a base.

"It is known that heat treatment of soybeans makes its protein more available. Whether or not this heat treatment actually improves the protein or removes toxic factors is not quite known. There is suspicion among some research groups that the sulfur amino acids do not really supplement the proteins in soybean oil meal but may act as removers or neutralizers of some undesirable toxic substances present in this legume."

Utilization of Soybean Oil Meal for Livestock and Poultry



By J. W. HAYWARD and L. B. CORMAN
Archer-Daniels-Midland Co.

THE RATHER constant annual production of soybeans in the United States for the years 1942 through 1945 at levels of 180 to 190 million bushels raises a couple of important questions.

1. Is this level of soybean production artificial and sustained primarily by wartime crop production programs?

2. Is this level the maximum that can be sustained by international, together with domestic, demand?

We have good reasons to believe that the production of the soybean and its various products is not at an artificial or excessive level. If price control continues, we will have to take active interest in encouraging soybean production lest the supply of raw material falls far short of the demand.

The present need for animal food products (meat, milk, eggs, cheese, etc.) in the United States and the world seems practically beyond the ability of man's resources to supply them. Soybean oil meal is closely associated with the production of these foods. Prior to World War II most animal nutritionists realized that our production of protein feeds in the United States was only about half enough to insure most efficient production of animal products. We are convinced that during this war period many farmers have realized that better feeding practices are profitable and undoubtedly they will continue to rely more on balanced rations than has been the custom in the past.

GRAINS OUT OF BALANCE

The production of carbonaceous grains in the United States is far out of balance with the production of protein-bearing materials. For example, the great state of Illinois that grows about 40 percent of all the soybeans grown in the United States *produces* little more than enough soybeans to balance the corn production of that state. Yet Illinois is expected to supply sufficient soybean oil meal to meet the needs of many outlying states, particularly those on the eastern and western seaboards. It is our general recommendation that farmers who want to assure a protein supply proportionate to their production of carbonaceous grains should grow approximately 1 bushel of soybeans to every 6.5 bushels of corn. It is true that not all corn that is produced is used for livestock feeding. However, according to the years of 1938 through 1943 fully 88 percent of all the corn produced was utilized for livestock feeding. Likewise, not all soybean oil meal produced is utilized for livestock feeding. Between 5 and 10 percent of the production of soybean oil meal or its equivalent in the form of flour or industrial protein is utilized for other purposes than for feeding livestock and poultry.

The relatively large percentage of the soybean oil meal produced during the war years found its way into feed channels via the feed manufacturer. It is true that the feed manufacturer, probably more than any other supplier of feed materials, has stressed the need for balanced rations. He has been a very important but inconspicuous factor in the proper utilization of soybean oil meal during the war years. He will continue to blaze trails in the expanded utilization of soybean oil meal. Production of commercial mixed formula feeds jumped from a calculated 15 million tons in 1941 to approximately 29 million tons in 1943. This greatly accelerated production of commercial mixed feeds will be maintained so long as the demand for food products is with us.

It is hardly necessary to elaborate upon the acceptability of soybean oil meal as an ingredient in livestock and poultry feeds. The production of soybean oil meal has skyrocketed just as has production of soybeans. Yet, in spite of this greatly accelerated production, there is not a single sack of soybean oil meal today that is not earmarked for some immediate use.

The United States production of soybean oil meal during the last several years is reported as follows by the War Food Administration:

Years, Beginning October	Soybean Cake and Meal	% of Total Oil Seed Meals	Total Production Oil Seed Meals
	1,000 Tons	%	1,000 Tons
1944-45	3,672.4	52.46	7,019.7
1943-44	3,444.5	48.01	7,174.6
1942-43	3,200.3	45.23	7,076.6
1941-42	1,844.9	32.90	5,608.1
1940-41	1,543.4	29.35	5,258.3

The production of soybean cake and meal from the 1944 crop was the greatest that has ever occurred in the United States. Unless we take immediate action it is likely to be the largest production for many years to come, for we are now advised that the acreage of soybeans planted in the United States in 1946 is the lowest since 1941. Soybeans planted in the United States alone for all purposes are estimated at 11.6 million acres for 1946. This acreage is 13 percent below the 13.4 million acres grown in 1945.

There is only a remote chance that an increase in yield will make up for the reduced acreage. Here is a challenge to the livestock industry, to the feed industry and to soybean processors. The acreage must be maintained at a relatively high level to meet the great demand for protein and oil-bearing materials. The world-wide demand for oils and fats continues at a high rate and is not likely to be reduced. The production of cottonseed, linseed and soybean oil in the Western Hemisphere gives every prospect of being less during 1946 than in previous years. The production of lard and edible fat is also expected to be down sharply.

COMPOSITIONS AND NEW DEVELOPMENTS

For the convenience of soybean oil meal users we are including the most recent analytical data available. Some vitamin

• This paper was presented by Dr. Hayward at the recent convention of the American Soybean Association at St. Louis.

values have changed in recent years due mainly to refinements in analytical procedures.

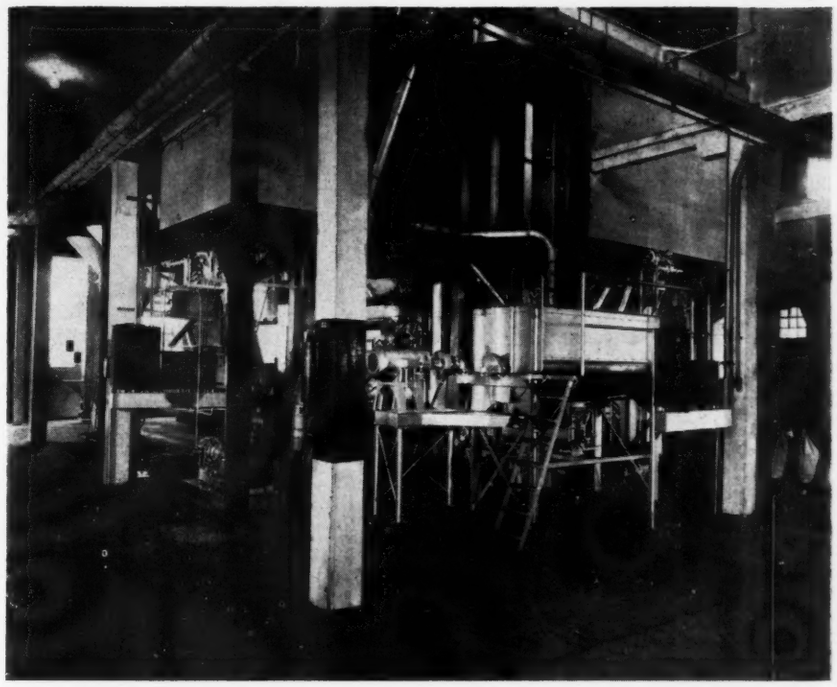
There is a new concept on the effect of heat in the improvement of the nutritional value of the protein of soybean products. The standard accepted explanation has been that moist heat tends to make the sulfur-containing amino acids, cystine and methionine, more available to animals. From rather recent investigations it is now postulated that there exists in raw or improperly cooked soybean products a substance that inhibits the function of the protein-splitting enzyme, trypsin, in making available to animals the amino acids cystine and methionine. Although this proteolytic inhibitor can be removed from raw soybeans or inactivated by other means than applying the proper amount and kind of heat, we do not believe that this discovery will radically affect the method of processing soybean oil meal.

A considerable amount of investigational work has been conducted during World War II on the value of soybean oil meal as the principal protein supplement in simplified rations for critical animals. Under certain conditions choline and methionine seem to improve the utilization and response to soybean oil meal, but by far the most effective supplements are sardine meal, condensed fish solubles and certain extracts of liver. Recent investigations have shown that the factor or factors found beneficial to soybean oil meal are also present in cow manure. Patton and other workers of the DuPont Co. have recently published studies with chicks which emphasize the unusual ability of non-protein factors in fish meal to supplement corn-soybean oil meal rations. Methionine is apparently without value when added to fishmeal-soybean oil meal combinations.

Ferrin at the University of Minnesota has demonstrated that pigs on simplified corn-soybean oil meal rations do not respond to either choline or methionine. Small levels of fish meal have contributed factors which very positively supplement this simplified ration. Parallel studies with rats in the research laboratories of our company have confirmed the supplementary value of fish meal.

These and various other similar studies indicate that properly supplemented soybean oil meal can be used as the principal protein concentrate in our most critical rations for animals and poultry. This places soybean oil meal in the strongest competitive position of all protein concentrates commonly used for feeding purposes.

Borden Operation to Waterloo, Iowa



General view of the mixers and grinding equipment at the Borden Co.'s Waterloo, Iowa, plant. Above may be seen the elevated bins which are partitioned to accommodate the various sizes of soy nuts.

Soy nut operations of the Whitson products division of The Borden Co. have been transferred from Chicago to Waterloo, Iowa, Gerald H. Stuart, Whitson vice president and general manager, has announced. Newly developed processing equipment has been installed at Waterloo, increasing capacity greatly and improving the quality and control of the product.

Production has been increased and research extended in response to the demand for soy nuts from the confectionery and bakery product manufacturers which has grown rapidly since Whitson Products acquired its original soy nut operation early in 1945.

Contributing to the demand is the new emphasis on increasing the food value of candy, as illustrated by discussions at the recent meeting of manufacturing confectioners in Chicago. Soy's high protein content, according to Mr. Stuart, is responsible for the wider use of nuts, both in whole and chopped form, in the confectionery field. Because of their protein content and flavor qualities, soy nuts are finding increased favor also with bakers for use in premium loaves.

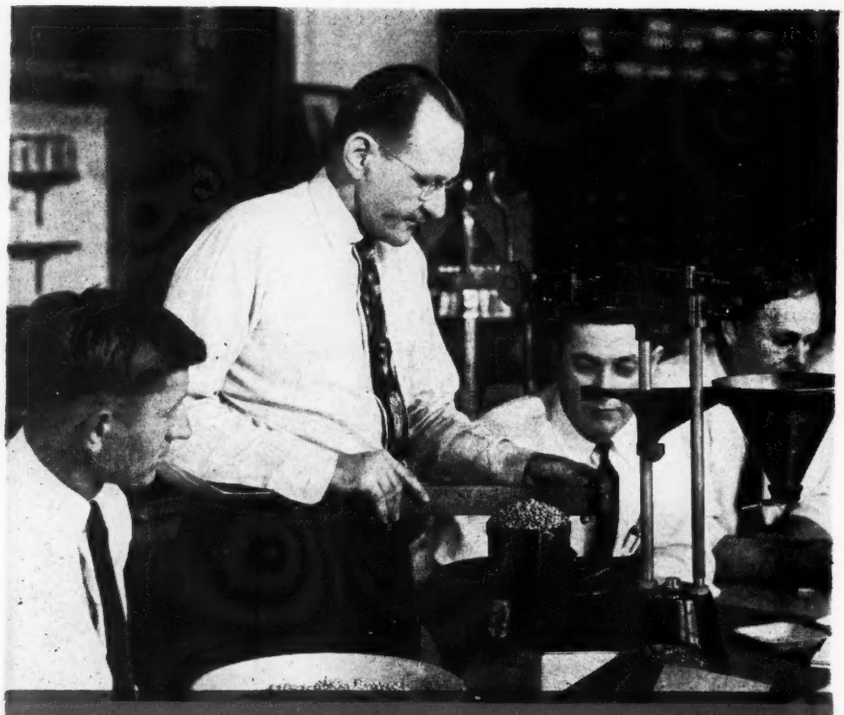
In the new Whitson plant, all processing, from raw beans to finished nuts, is mechanical. High, standarized quality is assured by new roasting techniques, improving flavor of the nuts, and the application of rigid laboratory controls in the various steps in processing.

Whitson's move to Waterloo has the added advantage of placing the operation close to rich sources of supply.

COMPOSITION OF SOYBEANS AND SOYBEAN OIL MEAL
(Representative Values - Not Absolute)

	Soybeans, Midwest Milling Varieties		SOYBEAN OIL MEAL 41 and 43% Expeller		44% Extracted	
Protein, %	34.0 -	38.0	42.0 -	44.0	44.0 -	47.0
Fat (ether extract), %	18.0 -	21.0	3.5 -	5.5	0.5 -	1.2
Fiber, %	4.0 -	5.0	5.0 -	6.0	5.0 -	6.0
Nitrogen Free Extract, %	26.0 -	27.0	31.5 -	32.5	32.0 -	33.0
Ash, %	4.5 -	5.0	5.5 -	6.0	5.5 -	6.0
Calcium, %	0.25-	0.28	0.28-	0.31	0.30-	0.38
Phosphorus, %	0.54-	0.60	0.56-	0.63	0.58-	0.65
Manganese, mcg/gm.	30 -		30 -		30 -	
Phosphatides, %	2.0 -	2.5	2.0 -	2.5	2.0 -	2.5
Choline, mcg/gm.	2250 -	3400	2250 -	3400	2250 -	3450
Inositol, mcg/gm.	1650 -		2000 -		2200 -	
Carotene, mcg/gm. (Total Carotenoids)	0.84-		0.54-	0.69	0.42-	0.48
Alpha Tocopherol, mcg/gm.	37.5 -		present		present	
2-Methyl, 1-4 napthoquinone, mcg/gm.	1.10-		0.45-		0.45-	
Thiamin, mcg/mg.	6 -	12	0 -	2.1	2.1 -	6.0
Riboflavin, mcg/mg.	3 -	5	3 -	5	3 -	5
Pyridoxine, mcg/mg.	8 -	12	6.2 -	5	6.2 -	
Pantothenic acid, mcg/gm.	12.4 -		14.0 -		14.0 -	
Niacin, mcg/gm.	24 -	30	35 -		35 -	
Biotin, mcg/gm.	0.6 -		0.70-		0.73-	
Folic acid	No data available					
Para-amino benzoic acid	No data available					

Note: Micrograms per gram may also be stated as parts per million.
Approximately 454 grams=1 pound.



At the scales is Prof. F. E. Robbins who pioneered grain schools in Indiana.

A SOYBEAN SCHOOL

Held at Purdue University for Grain Buyers and Processors

A series of three 1-day training schools was held for the Indiana soybean industry by the Purdue University department of agronomy in September. The opening school was September 11 for commercial grain buyers.

General sessions, attended by 60 processors, were held the following day which were of interest to the entire industry, and the series closed with a school in the grading of soybeans given for buyers from the cooperatives.

The schools are the outgrowth of the work of Prof. F. E. Robbins who held the first school in Indiana 13 years ago on grading wheat and corn. Robbins has pioneered grain schools all over the nation. He has continued to hold them in various parts of the state, previous to harvesting or before the grain comes to market. The attendance is limited so that individual training can be given. The meetings have been arranged at the request of the Indiana Grain Dealers' Association. In the last few years, Indiana Farm Bureaus have requested the training for their personnel.

The instruction is planned by Professor Robbins so that each individual follows through the entire technique of grading the grain to federal standards. Managers and buyers for elevators who attend are acquainted with grading equipment, its proper use with emphasis being placed on the necessity of making accurate moisture tests. The correct method of determining test weight and the recognition of various types of grain damage are also included in the day's instruction.

"Soybean Varietal Characteristics and Cultural Practice," were disscused by Keller Beeson, Purdue extension agronomist on the morning program of the general session which was opened with greetings by Dr. N. J. Volk, associate director of the agricultural experiment station.

Beeson stated that acreage grown in the future would depend on the profitableness of soybeans and relative corn and soybean yields. It is estimated that the soybean crop will average 20 bushels to the acre in Indiana and the corn crop, 52 bushels. This indicates that the price of soys should be two and one-fourth times the price of corn.

In reporting on experimental rotations at the Purdue University Soils and Crops Experiment Field, started in 1916, Beeson stated that it was shown that where soys are used in the rotation—corn, soybeans, wheat, clover—their yielding ability has compared more favorably with a second year corn crop for which they may substitute, than when their average producing ability has been compared with the general average producing ability of first year corn.

In addition the wheat yields following soys have averaged 6 bushels more per acre than when following corn and the hay yields have averaged slightly higher also.

A highlight on this day's program was the talk given by W. H. Goss, Northern Regional Research Laboratory, Peoria, Ill., telling of his recent trip to Germany as a member of the committee on technical information. He discussed methods of extraction of oil from seeds by the German industry.

"The demand for soybean oil meal or an oil meal of similar characteristics will probably continue at a much higher level than that which existed before the war," Dr. F. W. Quackenbush, head of the department of agricultural chemistry, stated in his talk on "Nutritive value of Soybean Oil Meal."

The nutritive value of soybean oil meal is dependent to a considerable extent upon the toasting process, the chemist explained. The degree to which raw meal is improved by toasting depends on the temperature, the time of heating, the moisture content, and some other factors. The optimum toasting temperature lies somewhere between 220 and 260 degrees. This treatment greatly increases the availability of methionine, an essential amino acid which is relatively low in soybean oil meal.

SUBJECT TO FEEDS LAW

Soybean processors, being in the feed business, are subject to the provisions of the Indiana feeding stuffs law when soybean oil meal is sold in this state, A. S. Carter, chief inspector for the state chemist, informed the group. The Indiana law requires the registration and labeling of all by-product feeds including soybean oil meal if offered for sale or sold in the state. Such feeds are exempt from the labeling provisions of the law if they are used 100 percent in registered mixed feeds. However, feed that is used for "custom mixing" is actually sold and all ingredient feed sold for use in custom mixes is required to be tagged with state chemist labels.

Carter pointed out that the moisture content of soybean oil meal is also of interest to feed control officials since the addition of excessive amounts of water in the manufacturing of the meal may result in evaporation and light weight bags. The average moisture content of soybean oil meal samples tested by the Indiana state chemist in 1945 was 9.4 percent which is a satisfactory average.

From the response of the industry and enthusiasm displayed by those who attended, Dr. Volk stated that the general session, which was offered for the first time this year, very likely will be repeated another year depending upon requests received by the agronomy department.

PILLSBURY EXPANDS OPERATIONS FURTHER

Expansion of Pillsbury Mills' feed and soy operations by addition of structures costing $200,000 at the company's Clinton, Iowa, soy plant, has been announced by Clyde H. Hendrix, president of Pillsbury's feed and soy division.

Two large units— a soybean oil refining plant and a soybean oil meal house—will be added to present Clinton facilities. The oil refining section, complementing the existing soy preparation and extraction plant, will process oil under the "once refined" method, according to Paige Lehman, vice president of the Pillsbury Co.

Meanwhile, other Pillsbury feed and soy division plant expansions are near the ready-to-operate stage. At Pillsbury's Centerville, Iowa, soy plant, extra concrete storage tanks for 300,000 bushels were completed in August. Installation of conveying and elevating equipment were finished in early October, in time for the new crop of soybeans.

Another improvement slated at the Clinton soy plant is the reconditioning and conversion of a battery of concrete tanks into storage for bulk soy oil meal. The bins, of about 400 tons capacity, have been used for soybean storage.

—sbd—

UNIT IN OPERATION AT GENERAL MILLS

The first of General Mills' four proposed soybean oil refining units began operation in September at the company's soybean processing properties at Belmond, Iowa. This unit, which removes lecithin from crude soybean oil produced at the Belmond plant by a degumming process, is under the operation of the company's chemical division, headed by Whitney H. Eastman, president.

Commercially, lecithin is used in textile dyes, confections, paints, leather tanning, medicine, ice cream, margarine, and for a wide variety of uses. It is a colloidal substance, serves as an emulsifier and gasoline stabilizer, and is used in bakery products as a shortening extender.

General Mills' chemical division expects to have the three additional refining units in operation late this fall. Along with the lecithin plant, the new units will also be located in buildings adjacent to the present soybean processing plant and elevator in Belmond.

—sbd—

SEEDBURO CATALOG NOW AVAILABLE



Seedburo Equipment Co. Chicago, recently mailed to its customers the 1946 *Seedburo Catalog and Reference Book.* The Seedburo line now includes over 500 items—all are described and illustrated in the new Catalog. Many new items have been added—O. K. bagging scale, Winslow truck scale, time switches, fire extinguishers, Gibbons bag holders, aluminum scoops, DDT products, new models of inter-communication equipment, and many other equally important and wanted items.

The catalog may be secured by writing to the Seedburo Equipment Co., 223 W. Jackson Blvd. Chicago 6. Ill.

—sbd—

GRASS OILS IN GUATEMALA

One of the "war baby" industries of Latin America is the production in Guatemala of the grass oils—citronella and lemongrass oils. The products are used in soap and perfumery, for scenting insecticides, and for other technical purposes. The grass oil growers pioneered in the decade before the war, according to Graham S. Quate of the U. S. Department of Agriculture, reporting to the Office of Foreign Agricultural Relations.

Citronella and lemongrass are related plants and the practices of production and the products are similar. In a warm climate and with good moisture—either from rain or from irrigation—these perennial grasses sprout promptly after harvest and are ready for cutting every 90 days, making the growing and distilling year round operations.



"This is the way one of our more recently acquired customers looked just *before* he contacted us. We admitted that *we do supply good stout bags for Soybeans, Meal, Feed and Flour;* and that our plants at New Orleans, Savannah, and Houston give good service. He was relieved, and we helped with the *best* solution to his problem, and thought we'd better remind you too—

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NEW ORLEANS HOUSTON
SAVANNAH



NEED TO CURTAIL IOWA OPERATION?

The greatly expanded soybean industry in Iowa will have to be prepared to curtail some operations if soybean production in the Hawkeye state falls during the years ahead.

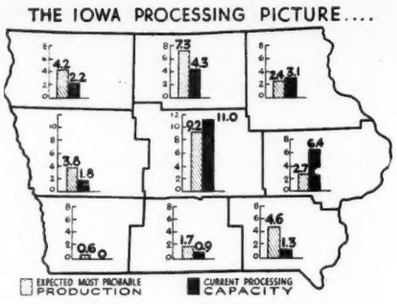
This is the conclusion of O. H. Brownlee, Iowa State College farm economist, who has made a study of the soybean processing industry in Iowa. Brownlee sets forth his conclusions in August *Iowa Farm Science.*

Before the war, soybean processing in Iowa was a relatively minor industry. There were enough plants to process only about 8 million bushels of beans in 1940. As soybean production in Iowa tripled from 1940 to 1945, new plants were built to raise the processing capacity to 32 million bushels this year. Some of the Iowa bean crop has been processed in out-of-state plants.

How far processors will have to go in curtailing their operations, or how many plants will have to close down altogether, depends largely upon the outlook of bean production now that the heavy war needs are over.

POSSIBLE LOW

Previous studies by Brownlee indicate that bean production may fall to as low as 24 million bushels per year. He feels, however, that a 35 million bushel production is a more reasonable estimate. If future bean production is maintained at about



Iowa Farm Science.

that level, or even higher, existing processing capacity appears to be adequate and fairly well distributed to handle all the crop without any of it being hauled long distances.

About a third of the plants in the state use the solvent process, while the remaining two-thirds use the expeller or screw-type process.

Since the solvent process is more efficient, extracting approximately 2 pounds more oil from each bushel of beans, it reasonably can be expected that plants using this process could maintain operations in the face of reduced production longer than some of the plants. As current expeller equipment deteriorates it probably will be replaced by solvent equipment or the plant will be forced out of business.

Brownlee says a small portion of the soybean processing plants in the state are farmer-cooperatives. Most of these plants are relatively small. The bulk of them are equipped with expellers.

COMPETITIVE POSITIONS

Although these plants have experienced profitable operations during the war, they may be in a weak competitive position with the more efficient solvent plants after the current high demand for fats and oils falls off.

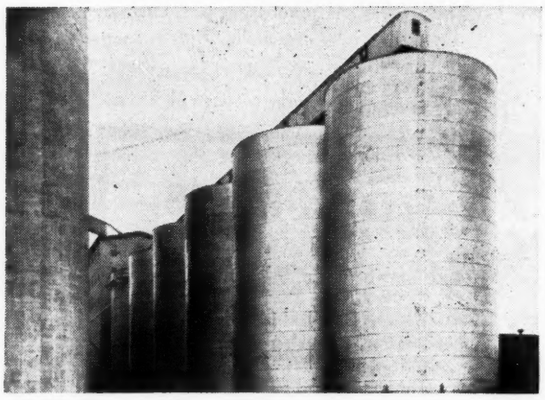
He points out, however, that there are reasons for continued operations of these cooperative plants in spite of their relatively inefficient equipment. The main reason for their continued operation is that they are almost certain to supply farmers with more inexpensive protein supplies.

—s b d—

Two symposia, one on drying oils and one on the industrial uses of oils and fats, as well as soap papers will be among the features of the technical program for the 20th annual fall meeting of the American Oil Chemists' Society to be held in Chicago on October 30, 31, and November 1 at the Edgewater Beach hotel.

Chairman is Howard C. Black, Swift and Co., Chicago, Ill. In charge of the soap section is L. B. Parsons, Lever Brothers Co., Cambridge, Mass., and of the drying oil symposium, S. O. Sorensen, Archer-Daniels-Midland Co., Minneapolis, Minn., who is president of the Society.

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Per Acre Yield Sets New National Record

The October 1 crop estimate of the U. S. Department of Agriculture puts the national soybean harvest at 183,432,000 bushels. This is 39,000 bushels above the forecast of a month ago. and about 4 percent below the 1945 harvest.

An average yield for the nation of 19.4 bushels per acre is indicated for the 1946 crop, the highest on record.

Estimated production in bushels for principal soybean growing states: Ohio 17,118,000; Indiana 25,800,000; Illinois 69,388,000; Michigan 1,484,000; Wisconsin 392,000; Minnesota 9,052,000; Iowa 32,021,000; Missouri 12,006,000; Kansas 1,986,000; Virginia 1,280,000; North Carolina 2,700,000; Kentucky 976,000; Tennessee 1,440,000; Mississippi 832,000; Arkansas 4,042,000. The production of all other states is estimated at 2,915,000 bushels.

Old crop soybean stocks on farms October 1 are estimated at 2.1 million bushels, the lowest carryover supply on record.

Soybean Digest crop reporters indicated some tendency of farmers to hold the new crop in expectation of possible higher prices.

There are scattered reports of disease in soybean fields, though not extensive enough to cut yields.

Reports of *Digest* correspondents follow. They are dated October 1, unless otherwise noted.

ARKANSAS

Tildon Easley, extension agronomist, Little Rock: Maturity about average. Drought probably cut yield some in parts of state. If weather continues favorable beans should grade high. Very little harvested. In southern part medium varieties beginning to mature. Harvesting prospects look fairly good. Labor situation improved over last year. Enough machinery to handle crop. The few early beans harvested yielded well. Most others look promising. Majority of beans will be marketed directly from field. Storage space inadequate for holding large quantities on farm.

L. M. Humphrey, R. L. Boetch Seed Farms, Scott, for Arkansas River valley and central: (Sept. 25). Maturity from 1 to 2 weeks late, due to late planting and recent cool weather. Considerable damage by late summer drought, leaf spot and insects. None harvested in this area. Harvesting prospects good at present. Yield about 75% of normal.

Jacob Hartz, Stuttgart, Ark., for northeast and east central: (Sept. 28). Maturity about normal. East central section damaged materially by 8 weeks drought. This particularly true on light soils in rice belt. Yields will be down sharply. I just returned from inspection trip to northeast Arkansas and southeast Missouri. One of best soybean crops ever in that territory. Harvest starts next week on Ralsoys, Arksoys and Ogdens. Thus far only Boones and Mancoupins harvested. They grade mostly No. 1 and 2, have yielded better than last year. 25% of crop will remain on farms.

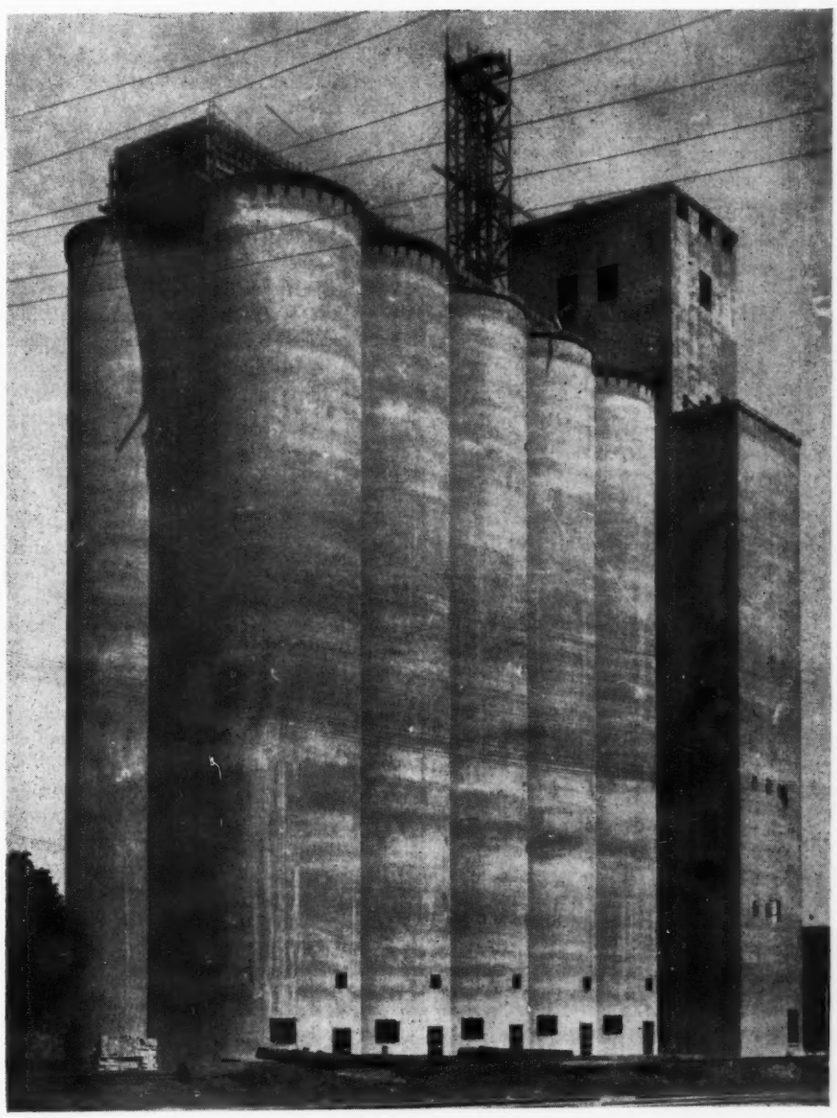
ILLINOIS

Henry I. Cohn, Carrollton, for west central: Maturity at least 1 week ahead of normal. All rowed beans past frost damage. Practically no damage to crop except by heavy rains in August. Beans will grade No. 2. Weather clear and harvesting prospects excellent. Hardly enough beans combined to venture estimates on yields but appears Lincolns running 25 bu. or more to acre. All beans that elevators will take will be marketed direct from fields. Amount held on farm depends on shipping facilities.

Frank S. Garwood & Sons, Stonington, for south central: Maturity about normal. Brown stem rot has reduced yield in large number of fields, perhaps on average of 10%. Quality will be reduced only slightly. Present indications soybeans will grade No. 2 or better. Old machines and shortage of parts may present some difficulties before harvest is completed. Yield slightly lower than earlier estimates, probably about normal or slightly above. If cars are available throughout harvest all beans except those used for seed, will be marketed. Recurrence of brown stem rot will probably mean more rowed soybeans next year, as these showed less damage. Also practice of following soybeans with soybeans will be cut down, as latter showed more disease damage.

Missouri Soybean Mill

This is a closeup of the new two expeller soybean mill of the M. F. A. Cooperative Grain & Feed Co., at Mexico, Mo. Capacity of the 19 bins is 300,000 bushels. Fire destroyed the firm's original mill in March 1944 shortly after it had gone into operation.



J. E. Johnson, Champaign, for Champaign and adjoining counties: Harvest getting in full swing with ideal harvesting conditions. Light frost Sept. 29, heavier 30th. Only damage to insignificant acreage of very late replant in drowned out areas. Quality good. Moisture content below normal for this time of year. Smaller percentage of weedy fields. Harvest should not last long with favorable weather. No farm storing unless car situation forces. Many grain points will store practically all season's run.

Walter W. McLaughlin, McLaughlin Agricultural Service, Decatur, for vicinity: (Sept. 25.) Maturity 90% normal. Considerable disease damage, but spotted and not general. Yield same as earlier estimates except for disease. 20% will be held on farms.

Russell S. Davis, Clayton, for west central: Maturity week late. Killing frost would improve quality by killing weeds and green plants. A few fields show visible damage from black stem rot. Not expecting as high yields as early growth indicated. Whole crop will go direct from fields if storage facilities permit. Looks as if rate of seeding would have more than usual effect on yields. Thin stands are not lodged, and are well podded, while thick stands are down badly and there are few pods on crooked, viney stems. Varieties with resistance to lodging will be outstanding in yield.



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INDIANA

K. E. Beeson, Indiana Corn Growers Association, Lafayette: Maturity normal most sections. Frost damage to relatively few late fields. Harvest just starting. Yield same as earlier estimates.

Peter J. Lux, state PMA committee, Indianapolis: Producers desire frost in many areas to assist in ripening low spots and killing any weeds in fields. Some damage by drought due to prematuring of early varieties. Yield down at least 10% according to recent reports. Some early harvested fields estimated at 15 to 20 bu. in central part of state only produced 7½ to 10 bu. when combined. Lincolns and later varieties coming through at about average yield. Due to drought condition, moisture is reported down as low as 8% at time of harvest. This results in high percentage of cracked and small beans. Harvest should be in full swing early next week in most sections of state. Many combines in fields waiting for maturity on later varieties. Many farmers will hold beans because of possibility of 15c per bushel floor price rise and fact that all regulations will probably go off June 30. Car situation is serious and elevator storage space not too good with present corn crop in sight. However, good storage space on farms is limited. Considering above, probably less than 50% of this crop will move into commercial channels.

Ersel Walley, Walley Agricultural Service, Fort Wayne, for northeast Indiana and northwest Ohio: (Sept. 29). Maturity normal. No frost damage except few low spots. Drought hurt some. No evident disease damage. If usual fall weather prevails quality should be excellent. Harvest will start around Oct. 1. Total production will exceed 1945. 80% of crop will go direct from field to market if market will accept it.

J. B. Edmondson, Clayton, for south central: (Sept. 27). Maturity normal. Practically all upper leaves off, with beans hard and dry now. 90% of crop out of frost danger in another week. Crop developing normally. No damage from adverse conditions showing up. Beans should grade above average barring adverse harvesting weather. Harvesting prospects fine. Beans standing well. Few weeds, plenty of combines. Reports indicate beans not as tall as last 2 years, possibly due to cool summer. This may lower expected yield somewhat. Probably 60 percent of crop will go to elevators.

IOWA

Howard L. Roach, Plainfield, for northeast: (Sept. 25). Maturity normal. Dry August cut podding on light soil. Such beans will be low in yield. Total yield will not be as good as earlier estimated. Beans will grade No. 2. Will start combining within 10 days. 70% of crop will be marketed from field.

Martin G. Weiss, farm crops department, Iowa State College, Ames, for central: Maturity 4 days ahead of normal. Beans will grade No. 2 for large portion. Harvesting prospects excellent. Yield above normal.

Fred W. Hawthorn, Castana, for western: (Sept. 25). Maturity about normal. Beans will grade No. 1 or 2. Harvesting will probably start in couple of weeks. Yield average or better. Most of crop will be marketed at once.

O. N. La Follette, Feed Institute of Iowa, Des Moines: (Sept. 28). Crop practically all safe from frost. Damage by drought only in limited area. Beans in general will grade No. 2 or better. Will be larger farm storage due to uncertainty of government policy.

Francis A. Kutish, Iowa State College, Ames, for central: Harvesting began about Sept. 25. Moisture content 12-14% on these beans. Some farmers talking about storing beans on farm until ceilings are lifted.

John Sand, Marcus, for northwest: Cool, wet weather in September caused beans to mature some later than normal. Several small areas hit by hail. Beans will grade very well. Harvest getting under way. By last of this week most of combines will be operating. Bean fields cleaner of weeds than normal. Beans about normal height or taller and standing well, which favors combining. A lot of producers still feel price of soys lower than satisfactory in comparison to other grains. Apparently less than normal amount will go to market from combines.

A. J. Loveland, state PMA, Des Moines: (Sept. 24). Maturity normal. Beans will grade No. 2 or better. State average yield 20.5 bu. 50% of crop will be held on farm.

KANSAS

E. A. Cleavinger, extension service, Kansas State College, Manhattan, for eastern: (Sept. 27). Maturity 5-10 days early. Drought has decreased state yield. Northeast counties, however, not hurt. Beans will grade lower than last year. Few No. 1, many No. 2 and 3, some lower. Harvest

will start first week of October. Estimate state average 8 bu. per acre. 90% of crop will be held on farm.

MICHIGAN

Farm Crops Department, Michigan State College, East Lansing: Maturity slightly later than normal. Probably 15% damage by drought. Excellent harvesting prospects. Yield less than normal and about same as earlier estimates. At least 50% of crop will be marketed directly.

James H. Quick, State AAA, Holt: (Sept. 25). Maturity week to 10 days later than normal. No frost damage expected. Beans will grade very good. Yield from 10 to 15% better than normal. 50% will be stored on farms.

MINNESOTA

John W. Evans, Montevideo, for southwest central: No general heavy frost here yet so beans ripening normally. Results very satisfactory to growers. Harvesting begun in an occasional field, with prospects good. One field test showed 11½% moisture. Looks like there will be many 20 bu. yields in this area. Yield prospects better than earlier indications. 25% or less will be held on farm.

N. C. Beiter, Farmer Seed & Nursery Co., Faribault, for central and southern: (Sept. 27). No frost damage to date. Extremely early varieties hurt some by drought. Beans should grade No. 1 if no hard frost next 10 days. Yield better than earlier estimates if no frost soon. Rains helped late varieties 5-6 bu. per acre. Estimated 80-90% will be sold direct from field.

MISSISSIPPI

Lacy S. Stoner, Holly Bluff, for Yazoo County: (Sept. 26). Maturity normal except for beans planted after oat harvest. No rain for last 2 months. Some pods not filled as should be. Beans will grade fair. Practically all beans will be harvested. Yield about normal but not up to earlier estimates due to drought. Seed beans only will be held by farmer.

MISSOURI

J. Ross Fleetwood, Columbia: Maturity normal. Most beans relatively safe from frost. 10-15% of crop harvested. Yield about as high as earlier estimates. About normal amount of crop will be held on farm.

Harry A. Plattner, Malta Bend, for central: (Sept. 27). Crop maturity 95% of normal. Beans will grade No. 2 or better. Prospects that beans will be harvested by Oct. 10-15. Yield 95% normal. 90% will be marketed direct from field.

E. M. Poirot, Golden City, for southwest: (Sept. 26). Maturity normal. Some drought damage. Harvesting prospects good. Yield under earlier estimates. 85-95% will be marketed direct from field.

A. E. Anderson, Lincoln: Maturity 100% or earlier. Beans should grade well. Harvesting prospects good. Yield same or better than earlier estimates.

Fremont Cake & Meal Co., Fremont, Nebr., for eastern: (Sept. 25). Killing frost would not hurt beans now. Bulk of crop will grade No. 2. Yield should be about normal. About 85% will be sold by farmers as harvested.

John M. Slatensek, Agricultural Experiment Station, Lincoln, for east-central: (Sept. 26). Bud blight infection up to 5% in some stands, otherwise beans remarkably free of disease and insect damage. Beans will grade No. 1 insofar as test weight and moisture content concerned. Splendid progress toward maturity being made at present as result of warm, dry weather. Yield outlook 3-5 bu. better than last year. Farmers with storage facilities will be in no hurry to market crop with current prices.

OHIO

D. G. Wing, Mechanicsburg, Ohio, for west central: 90% crop past danger of frost. A few late fields need 2 weeks yet. Dry weather in September cut down yield on late beans 10-20%. Some early beans will beat 30 bu. where early June rains did not drown them out. July planted beans were hurt by September drought. 80-85% of crop will go to market if cars are available.

G. G. McIlroy, Irwin, for west central: Maturity week later than usual. Drought has damaged crop 10-15%. Beans probably of smaller size than would have been without drought. 25% of crop will be held on farm.

D. F. Beard, agronomy department, Ohio State University, Columbus: (Sept. 28).

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Crop developed wonderfully during warm September that followed a cold, slow August. Very little can be damaged by frost now. Yield equal or better than earlier estimates. News of an inflationary nature may cause more holding of crop on farm than normally. Otherwise we are apt to have usual harvest-time market glut.

W. G. Weigle, Marsh Foundation Farms, Van Wert, for northwestern: (Sept. 28). No frost damage yet but low temperatures in early September delayed growth and filling of pods. Maturity 2 weeks late. Dry weather in late August has cut yield. Disease present will also affect yield. Some early beans (mostly Earlyana) being combined at 11-12% and are of good quality. Not over 10% of crop harvested. Early beans only making 15-20 bu. per acre. Anticipate 20-25 bu. will catch midseason varieties. Some Lincoln fields still green but most have started to drop their leaves. Expect yield 15-20% below normal. About 50% of beans will be marketed direct from fields. Some farmers will store anticipating better price.

SOUTH DAKOTA

H. G. Miller & Son, Garden City, S. D., for eastern half Clark County: (Sept. 26.) Crop matured in 95 days. Beyond all danger of frost. Six weeks of dry weather during time pods were filling cut yield some, probably 2 bu. per acre. Beans will grade nearly all No. 1. Combining will start about Oct. 10. Yield will be around 12-15 bu. about normal. We grow about 200 acres Wisconsin No. 507 Mandarin.

WISCONSIN

John P. Dries, Saukville, for lake shore and eastern: (Sept. 27). Maturity normal. Beans will grade No. 2 or better. Drought damage will drop yield estimate. Amount of crop which will move will depend on ability of farmers to have beans trucked to mills.

Geo. Briggs, Agricultural College, Madison: Maturity about normal. 30-40% injury by drought in northwest. Beans should grade No. 1. First harvest Sept. 26 on Earlyana field on southern border. Moisture 13%. Yield about 60-90% of normal. All beans will be marketed direct from field except those held for seed.

—s b d—

COMPARISON OF LINCOLN, EARLYANA

A comparison of 1946 crop Lincoln and Earlyana performance is all in favor of the Lincoln variety, writes H. I. Cohn of Valley Farms, Carrollton, Ill.

States Mr. Cohn: "On Valley Farms Co. we started combining September 26. We put a combine in a field of Lincolns and one in a field of Earlyanas. Both fields were planted at the same time, around June 1. The Earlyanas looked more nearly matured. The stems were all brown and a great many of them had fallen over. The Earlyanas tested an average of about 12.75 percent moisture and yielded about 18 bushels to the acre.

"The Lincolns did not look like they were ready to combine because many of the stems were still a brilliant green. However, the pods were dry and we combined a field, making a half dozen moisture tests. The highest test was about 12 percent and the lowest about 11.51 percent. In other words, the Lincolns tested about an average of 1 percent less moisture than the Earlyanas and yielded, as nearly as we could figure, 10 bushels more to the acre.

"On September 28 several other fields of Lincolns all tested around 12.50 or 12.75 percent while some of the Earlyanas were testing as high as 13.50 percent. This does not bear out the reputation of the Earlyana to be about 2 weeks earlier than the Lincoln. Nor does it show a very favorable yield ratio, nor do the plants stand up nearly as well. I can only tell you what I see in the field. The ads for Earlyana do not read that way."

—s b d—

CANADA INCREASES SOYBEAN PRODUCTION

Canada's 1946 vegetable-oil supply from a larger domestic production of minor oilseed crops may help ease the acute shortage of essential raw materials, reports USDA'S *Foreign Crops and Markets*. While official estimates are not yet available, indications are that above-average acreages were planted. Rapeseed and mustard-seed areas are expected to be the largest on record. Acreage goals for sunflower seed and soybeans were probably exceeded, especially in the important producing provinces.

This year's soybean acreage goal was set at 49,000 acres, about 12 percent above the acreage planted for beans in 1945. This crop is grown primarily in Ontario. Manitoba, the only other province that produces soybeans for commercial purposes, dropped from 2,500 acres in 1943 to 200 in 1945. As a rule, some of the soybean crop is cut for hay: last year over 17 percent was thus utilized. In addition many of the soybeans raised in Ontario are used to feed livestock on the farms where they are produced.

The ceiling price for Nos. 1 and 2 Canada grade soybeans is $2.15 per bushel delivered at Toronto, Winnipeg, Lethbridge, or Vancouver. The basis for the maximum price is determined on a moisture content of 14 percent or less. For each 1 percent increase over 14 and up to 19 percent there is a discount of 2.5 cents per bushel from the ceiling price. For a moisture content over 19 percent there is a discount of 3 cents per bushel for each 1 percent increase.

—s b d—

A civil action filed by the Department of Justice at Cleveland charges four firms with unlawful restraint of competition in the production and sale of lecithin. The defendants are American Lecithin Co., New York: Glidden Co., Cleveland: Archer-Daniels-Midland Co., Minneapolis, and Ross and Rowe, New York.

CASE HISTORY No. 9

One in a series of factual experiences of a group of American manufacturers with Multiwall Paper Bags.

COST COMPARISON
(Per Ton)

	200-lb Burlap Bags (Second-hand)	50-lb Paper Bags
Container cost	$1.80	$1.35
Labor cost	.50	.15
Total bag and labor cost	$2.30	$1.50
Saving, paper over fabric		$.80

CLASS OF PRODUCT PACKED

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CHEMICALS	FOOD
FEEDSTUFFS	MISCELLANEOUS ✓

PRODUCT CHARACTERISTICS

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CORROSIVE	HEAVY
DELIQUESCENT	HYGROSCOPIC
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FREE-FLOWING	VISCOUS

ST. REGIS BAG PACKAGING SYSTEMS are made in a variety of capacities, speeds, and manpower requirements to suit specific products and plant layouts. Machines are available in types to meet the special characteristics of a wide range of products, with filling speeds as high as twenty-four 100-lb. bags per minute — with one operator.

How a talc producer reduced his packaging costs

and "licked" dust at the same time

This 9th case history in a series of St. Regis Packaging System success stories tells how Cohutta Talc Co. of Dalton, Georgia, has improved working conditions and lowered packaging costs by using a St. Regis valve bag filling machine and multiwall paper valve bags.

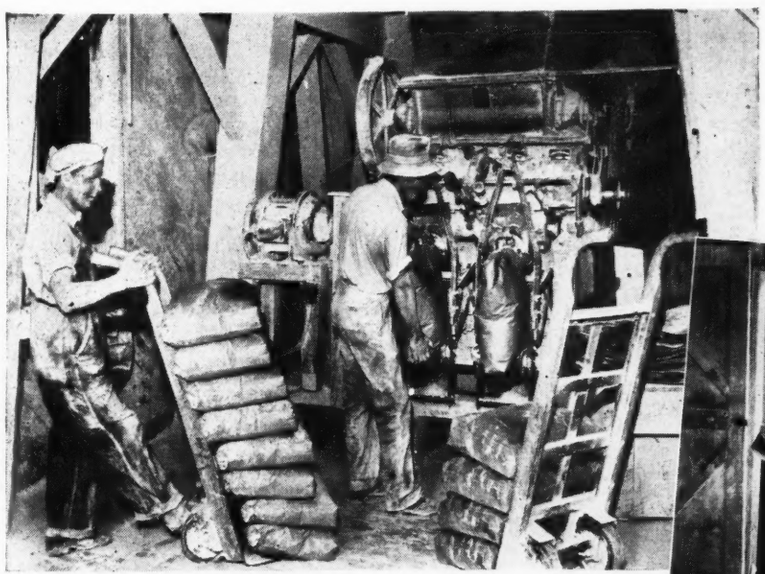
The product, formerly packed in bulky 200-lb. burlap bags, is now packed in easy-to-handle 50-lb. multiwall paper bags.

DUST IS CONQUERED — The St. Regis machine confines the dust during the packing operation and there is no siftage through the bag as in the case of burlap. So the dust problem was immediately eliminated from the packing operation.

BETTER WORKING CONDITIONS WELCOMED — Employees derived great satisfaction from the abatement of the dust nuisance as well as from working with the clean, easy-to-handle 50-lb. paper bags.

LABOR COSTS CUT 70% — A three man crew now packs ten tons an hour. This is *twice* the tonnage that a *five* man crew was able to pack in burlap. Labor cost dropped 70% . . . from 50 cents to 15 cents per ton packed.

TOTAL COST REDUCED — The Cohutta Company reports its per ton cost for burlap bags at $1.80 and for multiwall bags at $1.35 . . . a saving of 45 cents per ton. This, added to the saving in labor costs, results in an overall saving in packaging costs of 80 cents a ton.



(Left) One man operates the St. Regis 107-FC Packer, which simultaneously weighs and fills the 50 lb. multiwall bags.

(Right) Filled bags are easily moved by hand trucks and loaded in freight car.





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Publications

Feeding

VEGETABLE PROTEIN CONCENTRATES FED ALONE AND IN COMBINATION WITH SOYBEAN OIL MEAL AND FISH MEAL AS THE CHIEF SUPPLEMENTARY PROTEIN IN CHICK STARTING RATIONS. By G. F. Heuser, L. C. Norris and J. McGinnis, Department of Poultry Husbandry, Cornell University, in *Poultry Science*. March 1946.

Soybean oil meal as the only source of supplementary protein in a chick starting ration produced heavier chicks at 8 weeks of age than peanut oil meal or wheat germ meal, which in turn were better than cottonseed meal and corn gluten feed. Linseed oil meal was not satisfactory.

Replacing one-half of the protein of the various vegetable protein concentrates with soybean oil meal protein improved the growth so that there was little difference between them with the exception that the linseed oil meal was still poor. The supplementary effect of the soybean oil meal was greater for cottonseed meal and corn gluten feed than for peanut oil meal and wheat germ meal.

The inclusion of 3 percent of fish meal in the rations increased the response in all lots. This effect appeared to be additive rather than supplementary, thus indicating it was not due chiefly to amino acids.

Less feed per gram of gain was required on the rations showing good growth. The inclusion of fish meal or soybean oil meal in the ration increased feed efficiency.

DISTILLERS' BY-PRODUCTS AND SOYBEAN MEAL IN DRY CALF STARTERS FOR CALVES ON LIMITED QUANTITIES OF MILK. By H. P. David and G. W. Trimberger, Department of Dairy Husbandry, University of Nebraska College of Agriculture. Research Bulletin 146. Lincoln, Nebraska.

In feeding Holstein heifer calves from 3 weeks to 19 weeks of age, the following ration—50 lbs. of skim milk, alfalfa hay ad libitum, and a dry calf starter (16 percent digestible protein) with soybean oil meal as the principal high protein supplement—it was found that the results as measured in gains and growth were not satisfactory.

Non-fat dry milk solids had an ameliorating effect even in small quantities when substituted for the soybean oil meal. After the calves reached 18 weeks a grain mixture containing soybean oil meal as the principal high protein supplement yielded satisfactory growth and gains.

The results emphasize that up to the time when calves eat grain and hay freely, non-fat dry milk solids are particularly useful in getting calves started.

COMPARATIVE RESULTS WHEN SOYBEANS ARE USED AS THE PROTEIN SUPPLEMENT IN RABBIT FEED. By Chester Wolter in *Small Stock Magazine*, April 1946.

Mr. Wolter has carried out some extensive experiments in his own rabbitry in comparing soybeans and soybean pellets in the ration.

Rabbits fed whole beans were filled with fat on butchering. "The kidneys were completely covered with fat and the heart was surrounded with fat. The meat was more flabby, and lacked the lustrous color present in the rabbits fed the soybean meal pellets. In my opinion the rabbits receiving the pellets had a better flavor, were a little more vigorous, and had better health in general," he says.

At 3 months the rabbits receiving the soybean pellets were 5 ounces heavier than those being fed the linseed oil meal pellets and 1 pound 7 ounces heavier than those receiving the raw soybeans.

Sampling

PRE-HARVEST SAMPLING OF SOYBEANS FOR YIELD AND QUALITY. By Earl E. Houseman, Charles R. Weber and Walter T. Federer. Research Bulletin 341, Iowa State College, Ames, Iowa.

The route-sampling method of estimating crop production has been extended to soybeans in a preliminary survey which is reported.

Protein percent, oil percent and iodine number of the oil can be estimated satisfactorily. Estimating yield is more uncertain pending accumulation of information on adjusting for harvesting losses and other factors which cause the sample average yield to be too large.

The yield of seed per acre differed with the width of rows. Indications for the season studied were that soybeans should have been planted in rows about 2 feet apart. The iodine number of the oil was lower for fields with wide rows than for drilled fields. This was attributed to difference in date of planting rather than method of planting.

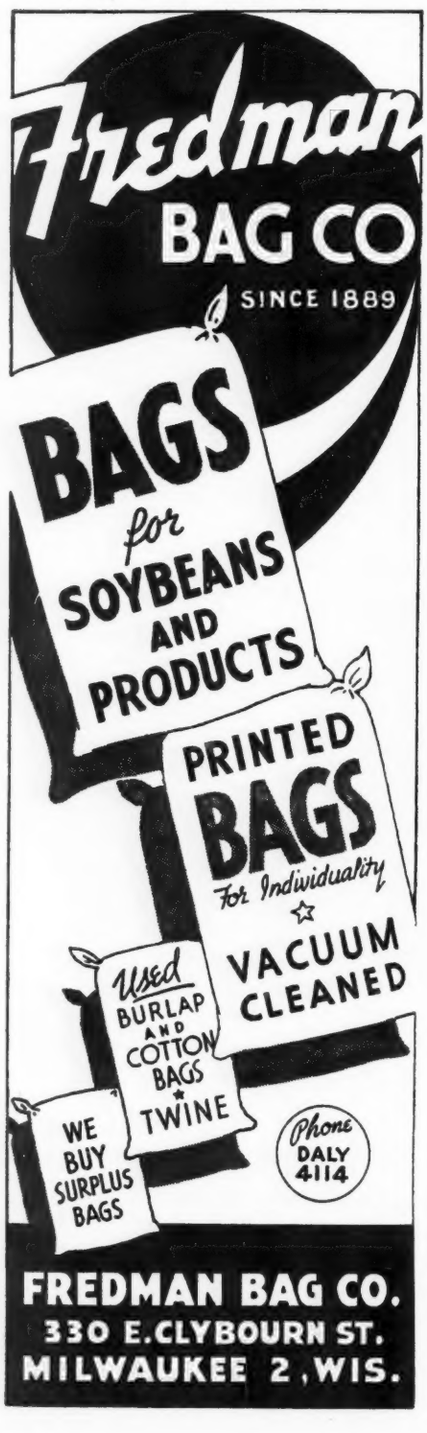
Other investigations have shown that after the pods are fully distended there is little or no change in yield or chemical composition. This indicates that production and quality can be estimated well in advance of harvest.

Food

LOAF VOLUME POTENTIALITIES, BUFFERING CAPACITY AND OTHER BAKING PROPERTIES OF SOY FLOUR IN BLENDS WITH SPRING WHEAT FLOUR. By K. F. Finney, *Cereal Chemistry*, January 1946.

Excellent bread may be made from wheat-soy flour blends including up to 8 percent soy flour by the use of from three to five times the quantities of potassium bromate needed for wheat flour alone.

Baking studies were carried out in the Federal Soft Wheat Laboratory at Wooster, Ohio, using a commercially milled and bleached hard red spring wheat flour containing 15 percent protein, with various increments up to 8 percent of each of three different soy flours.



Insects

NOTES ON THE EFFECT OF ALUMINUM SULFATE AND KOLOFOG IN LIME SPRAYS APPLIED TO SOYBEANS AS REPELLENTS FOR THE JAPANESE BEETLE. By J. Peter Johnson, Forty-fourth Report Connecticut State Entomologist. Bulletin 488. Connecticut Agricultural Experiment Station. New Haven, Conn.

Applications of hydrated lime, 20 pounds plus 3 pounds of aluminum sulfate in 100 gallons of water, were not entirely satisfactory when applied to the foliage of field-grown edible soybeans for control of the Japanese beetle. Immediately following an application the beetles were less numerous, but the plants became infested within a few days.

Laboratory tests were conducted on plants in the greenhouse and Kolofog, in comparison with aluminum sulfate, appeared very promising. As the beetles, when caged, will feed on foliage sprayed with lime, field tests were necessary to determine the respective values of the materials.

Field tests on the edible variety Hokkaido were carried out in the season of 1944.

A spray containing 30 pounds of lime plus 10 pounds of aluminum sulfate to 100 gallons of water, gave results significantly better than the standard spray, 20 pounds of lime plus 3 pounds of aluminum sulfate, and the check plot receiving no treatment. None of the other sprays except the standard gave any improvement over the check.

There were no significant differences between the sprays in their effect on crop yields.

Missouri

SOYBEANS. Leaflet by the Missouri Department of Resources and Development, State Office Building, Jefferson City, Mo.

This 12-page booklet on the soybean crop and industry in Missouri is designed for use in class rooms and reference libraries "to assist in enlightenment of people, young and old, in the many uses of soybeans."

There are maps and tables showing soybean production by counties and sections, and the location of the state's eight soybean processing plants. There is also a section outlining the state's industrial advantages which affect the soybean industry.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of The Soybean Digest, published monthly at Hudson, Iowa, for October 1, 1946.

State of Iowa
County of Black Hawk
ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared George M. Strayer, who, having been duly sworn according to law, deposes and says that he is the Editor of The Soybean Digest and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to-wit.

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher: American Soybean Association, Hudson, Iowa.

Editor: Geo. M. Strayer, Hudson, Iowa.

Managing Editor: Kent Pellett, Hudson, Iowa.

2. That the owner is: American Soybean Association, Hudson, Iowa.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

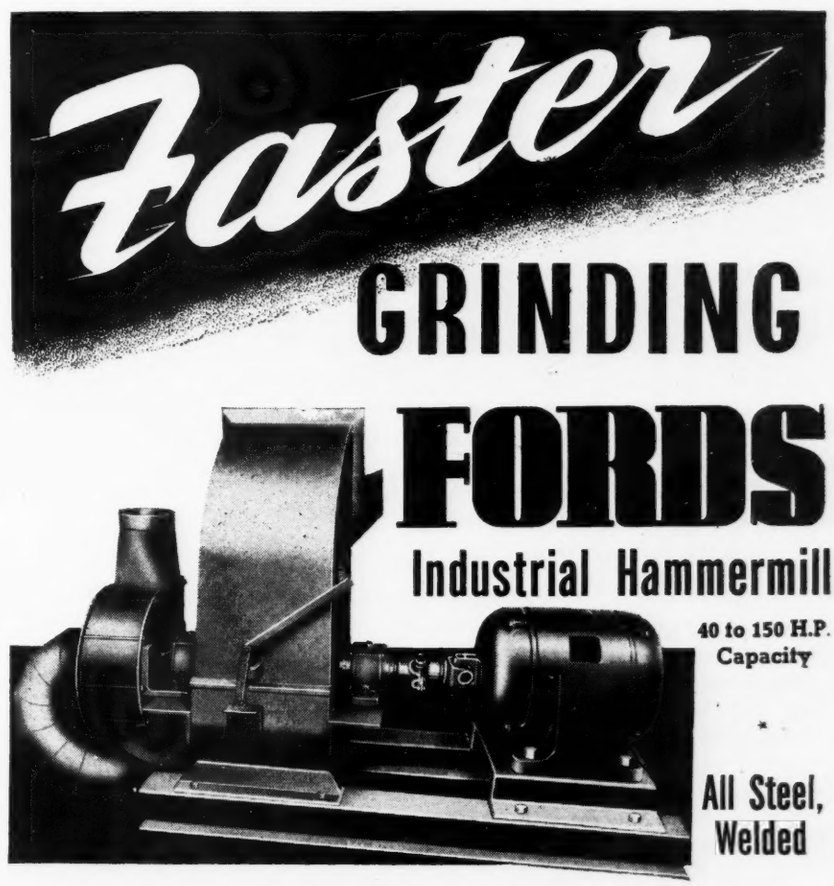
4. That the two paragraphs next above, giving the names and the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

GEO. M. STRAYER,
Editor.

Sworn to and subscribed before me this 21 day of Sept., 1946.

(SEAL) R. F. BUSCHING.

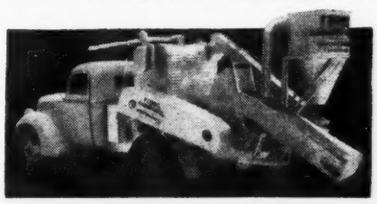
(My commission expires July 4, 1948.)



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GRITS and FLAKES...

FROM THE WORLD OF SOY

The Drackett Co., Cincinnati, has under way in Sharon, Ohio, construction of a $500,000 plant to handle about 1 million bushels of soybeans a year.

* * * *

Hemphill Soy Products Co., Kennett, Mo., have added another Anderson Expeller, making a three expeller mill, increasing the capacity to 80 tons a day. They have also increased their storage by an additional concrete and storage building for 150,000 bushels.

* * * *

Clyde H. Hendrix and Harry R. Schultz were elected president and vice president respectively of Pillsbury Mills' feed and soy division September 10.

* * * *

Kraft Cheese Co. has announced a new livestock feed called Kraylets. The product is composed of cheese and whey solids, soybean oil meal, alfalfa meal and brewers yeast.

* * * *

Dr. A. G. Norman, professor of soils at Iowa State College since 1937, has accepted an appointment with the War Department. He is stationed at Camp Detrick, Md., to participate in work for the research and development department of the Chemical Corps.

* * * *

A two-story, $125,000 office building of the soya products division of the Glidden Co. is being built at the firm's Chicago plant at 5165 Moffat St.

* * * *

Appointment of Dr. James E. Briggs as director of feed nutrition has been announced by A. E. Staley Mfg. Co., Decatur, Ill. Dr. Briggs received his Ph. D. degree at Cornell University, has taken work at Iowa State College, Oklahoma A. and M., and North Carolina State College.

* * * *

Clifford M. Townsend, associated with Central Soya Co., Inc., at Fort Wayne, Ind., and a former governor of Indiana, has been nominated for U. S. Senator by the Democrats.

* * * *

Officers reelected at the annual meeting of Feed Institute of Iowa at Des Moines September 12 were: Howard Boeke, Des Moines, president; George Cook, Dougherty, vice president; Carroll Swanson, Des Moines, secretary-treasurer; and O. N. La Follette, Indianola, executive secretary.

* * * *

Cargill, Inc., has announced the election of Fred M. Seed as a director of the company. Mr. Seed has been connected with Cargill for almost 15 years, was made vice president in charge of the feed and oil division last year.

* * * *

The National Farm Chemurgic Council moved its national headquarters from 50 West Broad Tower to 1368 North High Street in Columbus, Ohio, September 1. Growth of the Council made necessary the move to more spacious quarters.

* * * *

The first flax to be processed in the Wichita, Kans., plant of the Soy-Rich Products Co. was run through recently. The firm expects to process a considerable volume.

* * * *

H. L. Raclin & Sons has opened an office in Sao Paulo, Brazil, under the supervision of George P. Martin, assisted by Andrew Herkoltz. H. L. Raclin recently returned from a 5 week trip to Brazil, Argentine and Uruguay.

* * * *

The National Farm Show, first devoted to farm equipment ever held in the Midwest, will be staged from November 29 through December 8 at the Chicago Coliseum, Marcus W. Hinson, exposition manager, announces. Scores of exhibitors will present implement previews.

* * * *

The American Soybean Association's 26th annual convention was covered in a signed column by John A. McWethy in the August 31 *Wall Street Journal*. McWethy found the industry's optimism about the future to be "based on a galaxy of new soybean products."

* * * *

Ford Motor Co. has formulated an enamel expected to outlast the steel car body. It is made of a soybean oil modification of glyceryl phthalate type resins.

* * * *

Dr. Percy L. Julian, director of research for the Glidden Co., was subject of an interesting article by Paul de Kruif, in August *Readers Digest*. The Glidden firm are preparing to build for Julian what de Kruif calls "a magnificent research institute" to house him and his staff of 50 chemists.



ANDREAS KELM

CARGILL ADDS TO LIST OF OFFICERS

Cargill, Incorporated announces the election of two additional divisional vice presidents: Erwin E. Kelm in charge of the grain division, and Dwayne O. Andreas in charge of the vegetable oil division.

Mr. Kelm's association with Cargill dates back to 1933 immediately after his graduation from the University of Minnesota. He has devoted his energies entirely to grain merchandising.

Mr. Andreas gained his experience in the vegetable oil field in the development and management of the Honeymead Company of Cedar Rapids, Iowa. In 1945, when Cargill bought that plant, Mr. Andreas came into the Cargill organization, first as manager at Cedar Rapids, and later was moved to the main office in Minneapolis.

Cargill, Inc., announces the purchase of the solvent process soybean plant at Washington, Iowa, from Joseph M. Sinaiko, pioneer Iowa processor.

The firm announces at the same time the sale of its Cedar Rapids, Iowa, expeller plant to Sinaiko. The latter was former owner of the Cedar Rapids plant under the name of the Iowa Milling Co.

Cargill took over the Washington plant, which is now in full operation under the management of Hugo Lensch.

—s b d—

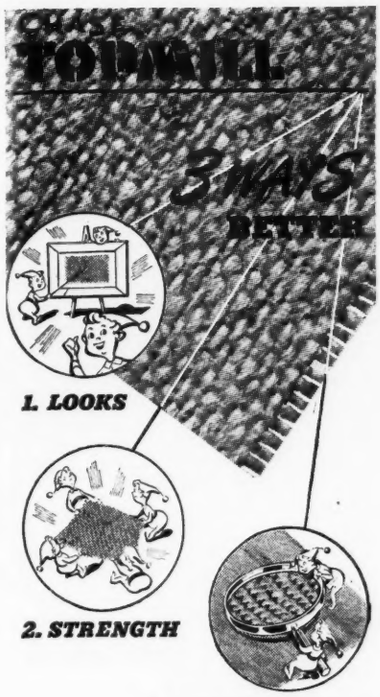
MANAGEMENT CHANGE BY SOY-RICH PRODUCTS

Moore Grain, Inc., has become affiliated with Soy-Rich Products, Inc., through purchase of additional common stock resulting from an increase in capitalization of the latter firm, War O. Brooks, vice president of Soy-Rich Products, Inc., announced.

Both are Wichita, Kans., firms.

Ralph S. Moore, president and managing officer of Moore Grain, assumed the management of Soy-Rich Products, Inc. on October 1.

Principal office of the corporation is located at 512 Wheeler-Kelley-Hagney Building. Personnel for handling of soybean purchases and oil meal sales will be maintained at the Soy-Rich Products plant office.



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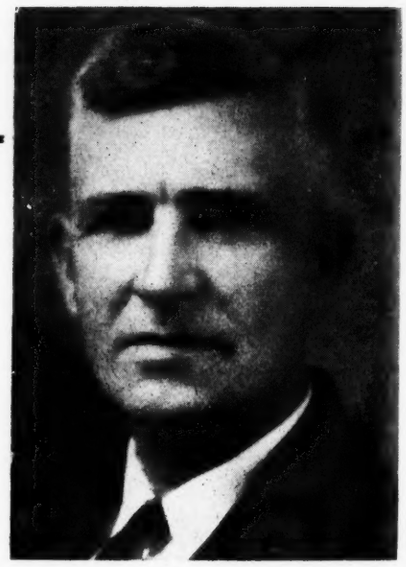
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W. E. RIEGEL
SOYBEAN PIONEER



W. E. RIEGEL

"The death of Mr. Riegel is a tremendous loss to the University and to the agricultural college in particular. He was one of the most outstanding agricultural leaders in the state and nation, a leader who stood for progressive education, and certainly one of the most prominent contributors to farming practices in the Cornbelt."

This sentiment uttered by Dr. W. L. Burlison, head of the department of agronomy of the University of Illinois, following the unexpected death of W. E. Riegel, Tolono, Ill., September 2, was generally echoed throughout the soybean industry.

Mr. Riegel, who was 63, had not been in the best of health the past year, but was thought by his friends to be improving. In company with Mrs. Riegel and Mrs. Charles Meharry, he had attended the American Soybean Association convention in St. Louis the week before his death.

He drove a tractor to the field on the morning of September 2 when he suddenly became ill. He died late that evening.

W. E. Riegel was a true soybean pioneer. He had been associated with soys in Champaign County for over 30 years. Champaign leads the world in soybean production, is regarded as the very heart of the soybean belt.

He was given much credit for the fact that soys have become a major crop in the Midwest. He began growing them "and hogging and cattling them down" long before there was any hint of a soybean industry. It was a decade and more later when processing plants were built, the combine came east from the wheat belt, and the American Soybean Association was born.

Riegel helped found ASA. The second meeting of the Association was held in Champaign County in 1921 and he was elected president. He was active in the Association throughout its 26-year history.

Mr. Riegel did not go to high school. Instead, he made the long jump from grade school to the University of Illinois in the fall of 1905. "Compared to other students I learned very little, but compared to what I knew when entering college, I learned much," he said. The first part of this statement must be taken as coming from a modest man.

Though he did not graduate, he maintained a close relationship with his alma mater after he left the university. He served on the agronomy advisory committee as well as the general advisory committee of the University for many years. His two daughters and son are all graduates of U. of I.

Following graduation and marriage and a few years on his father's farm, Mr. Riegel went as manager to the C. L. Meharry farm 2 miles southeast of Tolono in 1913. He was still actively managing the 1,200 Meharry acres at the time of his death.

Meharry had been growing soybeans since 1908. He had planted 19 acres of them in 1909 to the astonishment of his manager, who could not understand what he could do with so many soys. Riegel began growing the crop 3 years before he went with Meharry. Now together they pioneered in soybeans as well as lespedeza in Illinois. They were generally credited with introducing lespedeza into that part of Illinois.

Riegel helped introduce soybeans into many Illinois counties. For years he was in demand by county farm advisors to speak on soys. Once he spent almost a week in Chicago speaking on the subject daily or oftener over Radio Station WLS.

The Meharry farms still grow big crops of soybeans, as well as large acreages of corn and wheat. Lespedeza furnishes extensive pastures for cattle.

Riegel was instrumental in securing protection for the growing industry in the tariff act of 1929. With Meharry and that other well known soybean pioneer of Tolono, John T. Smith, he testified before a congressional committee in Washington in favor of such protection. It was duly accorded to soybeans, soybean oil and oil meal. Under the protecting wing of the government, which shut out huge importations of soy products from the Orient, acreage expanded rapidly in the 30's.

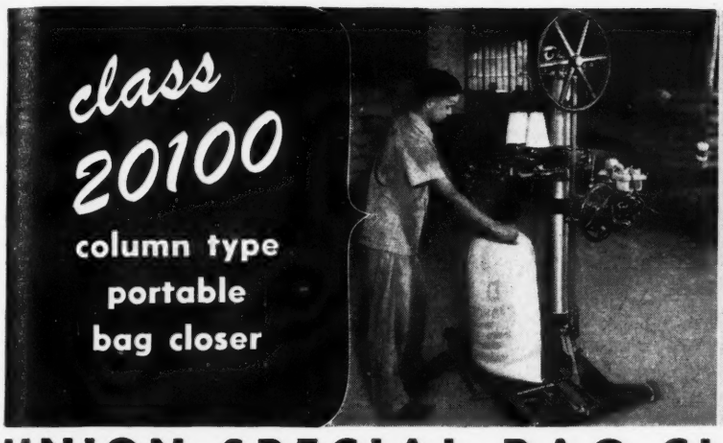
In recognition of his ability as a farmer, Riegel was named "Master Farmer" by *Prairie Farmer*, and "Champion Farmer" by Firestone Tire & Rubber Co.

But he did not confine his efforts to soybeans or even the Meharry farms. The names of the groups in which he was active read like a catalog of Champaign County service organizations.

To list a few: he was a member of the board of directors of a Tolono bank and member of the school board; president of Champaign County Farm Bureau; an organizer of Champaign County Service Co.; president, secretary and member of board of Illinois Crop Improvement Association; trustee of Farm Foundation; director of Farm Security Administration; agricultural chairman war bond drive for Champaign County; member Illinois Farm Managers Association; member board of Alumni Association of University of Illinois; and on the boards of Wesley Foundation and Young Men's Christian Association.

One reason our sometimes faltering democracy functions as well as it does is that so many of its substantial citizens like Riegel are willing to work long hours at doing the public chores. They accept offices, do committee work and become the indispensible men who furnish the breath of life to all organizations.

If Champaign County leads the nation in soybean production and is more progressive in other ways than most counties it must be due in some degree to Mr. Riegel's efforts.



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WASHINGTON Digest

By PORTER M. HEDGE

Washington Correspondent for The Soybean Digest

Recession Coming?

Officials attending the Department of Agriculture outlook conference in Washington this month heard predictions of a high level of demand and prices for soybeans, at least through the first half of 1947.

After mid-1947, prices will depend on the general level of business activity and consumer income.

No "substantial" surplus of soybeans is expected to develop during the next 2 years, even with acreage maintained at present levels—unless there is a "severe" business recession in the U. S.

"A marked recession in general business lines," says the new outlook report, "probably would be accompanied by declines in prices of fats and oils despite the apparent scarcity of supplies."

Leading government economists are expecting some kind of a business recession to hit during the first half of 1947. They aren't any more specific in their timing, nor do they agree on the intensity of the expected recession.

However, they look for more of a general price shakedown—a return to a "more normal healthy level"—than for a depression resembling 1921.

The outlook report says the prospect for a continued strong demand for soybeans is based on several factors. "The level of consumer income in the United States is so high that a substantial decline would leave income still well above the prewar peak reached in 1941.

"Demand for soybean oil meal for feed in the United States has increased as a result of greatly expanded use, with favorable results, during the war.

"World export supplies of oils and fats are not likely to return to the prewar level before 1949 or 1950. As long as Manchurian soybeans remain unobtainable in world markets, a potentially strong export demand for United States soybeans is likely."

Here is the general domestic supply outlook for the next 12 months:

Total production from domestic sources is estimated at 8.6 billion pounds, 3 percent under the total produced in the 12 months ending Sept. 30, 1946.

Declines are expected in most of the major domestic sources except butter, which may show a slight increase. A slight cut is anticipated in soybean oil production.

U. S. factory and warehouse stocks of fats and oils October 1 are put at between 1.25 and 1.35 billion pounds, compared with 1.65 billion a year earlier.

Some rise in domestic fats and oils production is expected during the 1947-48 season, but the increase won't be great unless there is a big stepup in 1947 spring and fall pig crops.

On the export side, supplies of copra, whale oil and linseed oil from Argentina are expected to increase next year, but the total from the surplus producing areas will be well below prewar, possibly even in 1948.

Fats, oils and oilseeds available for export to North America and Europe from the major surplus producing areas are estimated at 5.5 billion pounds this year compared with 4.3 billion in 1945 and a 5-year prewar average of 9.6 billion.

In the first 6 months of this year, exports of Philippine copra totalled 190 million pounds in terms of oil. Nearly two-thirds of this was destined for U.S. consumption. The report says:

"Philippine copra exports will be greater in 1947 than in 1946, and may equal or exceed the prewar volume of exports of oil and copra.

"Exports of copra and coconut oil from the Netherlands East Indies in 1947 will be substantially larger than the 100 million pounds estimated for the latter half of 1946 (prewar exports were 748 million pounds, oil equivalent).

"Whale oil production in the Antarctic next season is more likely to be about 500 million pounds, half as large as in 1935-39.

"Export supplies of fats and oils from Argentina may be materially larger in 1947 than in 1946, as relatively high prices to farmers probably will induce planting of large acreages."

"With larger world export surpluses of fats and oils available in 1947, imports into the United States probably will increase. Exports from the United States are likely to decline. A net import of fats and oils is likely. This would be the first net import since 1942, but the quantity of net imports would be small compared with the prewar average totalling 1.5 billion pounds.

Price Picture

A 1947 soybean acreage goal of 10,300,000 acres for harvest as beans has been suggested tentatively by the Department of Agriculture. This compares with an estimated harvest of 9,477,000 acres this year.

It also is proposed to offer the same price support for soybeans next year—$2.04 a bushel.

One reason why a higher price support for 1947 hasn't been recommended is that there is strong sentiment within USDA that Congress will discard most price controls by spring planting time.

Should this happen, it's reasoned, soybean prices would rise high enough to compete

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The Administration is making no plans for an increase in price ceilings on protein meals because of the 15-cent a bushel boost in soybean prices.

A fats and oils branch official says no price rise for meal has been considered, nor is there any intention of making an increase.

The Administration has pulled the cork on a series of new price moves which will mean higher market prices for soybeans and soybean products. Here is a roundup of the most recent price actions:

A boost in ceiling on crude soybean, cottonseed, peanut and corn oils of 1¾ cents a pound.

Increase in ceiling on 1946-crop soybeans of 15 cents a bushel.

Raise of 1.89 cents a pound in ceiling on refined soybean oil. Average increase of 2½ cents a pound in retail ceilings on margarine, cooking and salad oils, mayonnaise, salad dressing, and shortening.

These price jumps stem from a recommendation of the Secretary of Agriculture for an increase in crude oil ceilings as a means of increasing production.

In a separate action, OPA has granted price rises in producer ceilings for soybean adhesives and for isolated proteins made from soybean oil meal as the result of the $14 a ton boost in soybean meal price last May.

The price boosts range from 25 to 70 cents a hundred pounds on adhesives, and from 70 cents to about $2.80 a hundred on the proteins.

These are the specific changes authorized, effective October 1, in the 1946-crop soybean price structure:

Base prices for U. S. No. 2 green and yellow beans, up from $2.10 to $2.25 a bushel; in U. S. No. 2 brown, black and mixed beans, up from $1.90 to $2.05 a bushel.

Distributor markups: For country shippers, up from 5 to 5½ cents a bushel; for merchandisers, up from 2½ to 2¾ cents a bushel "where they own or maintain and unload into storage facilities except at the country shipping point and from 1 to 2 cents per bushel for all other merchandisers."

Storage charges: The seasonal rate is increased from 6 to 7½ cents a bushels with the requirement that soybeans must remain in storage for at least 90 days to take the seasonal rate.

The daily storage rate of 1/30 of a cent a bushel a day is to apply to storage for less than 90 days, for season storage after 240 days and for storage of soybeans which must be removed from storage because of their condition.

—sbd—

NEW VARIETY BY RUSSIANS

A new variety of soybean, the "Ussuriiski," has been developed at an experimental station in the Maritime Territory of the U.S.S.R. (Russian Far East), says the U. S. Department of Commerce.

The principal characteristics of the new soybean are a long stem and the grouping of the pods high on the stalk. This prevents loss of pods in harvesting with a combine.

About 49 acres are being sown to the new variety at the experimental station where it originated, and seeds have been sent to other Soviet collective farms.

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

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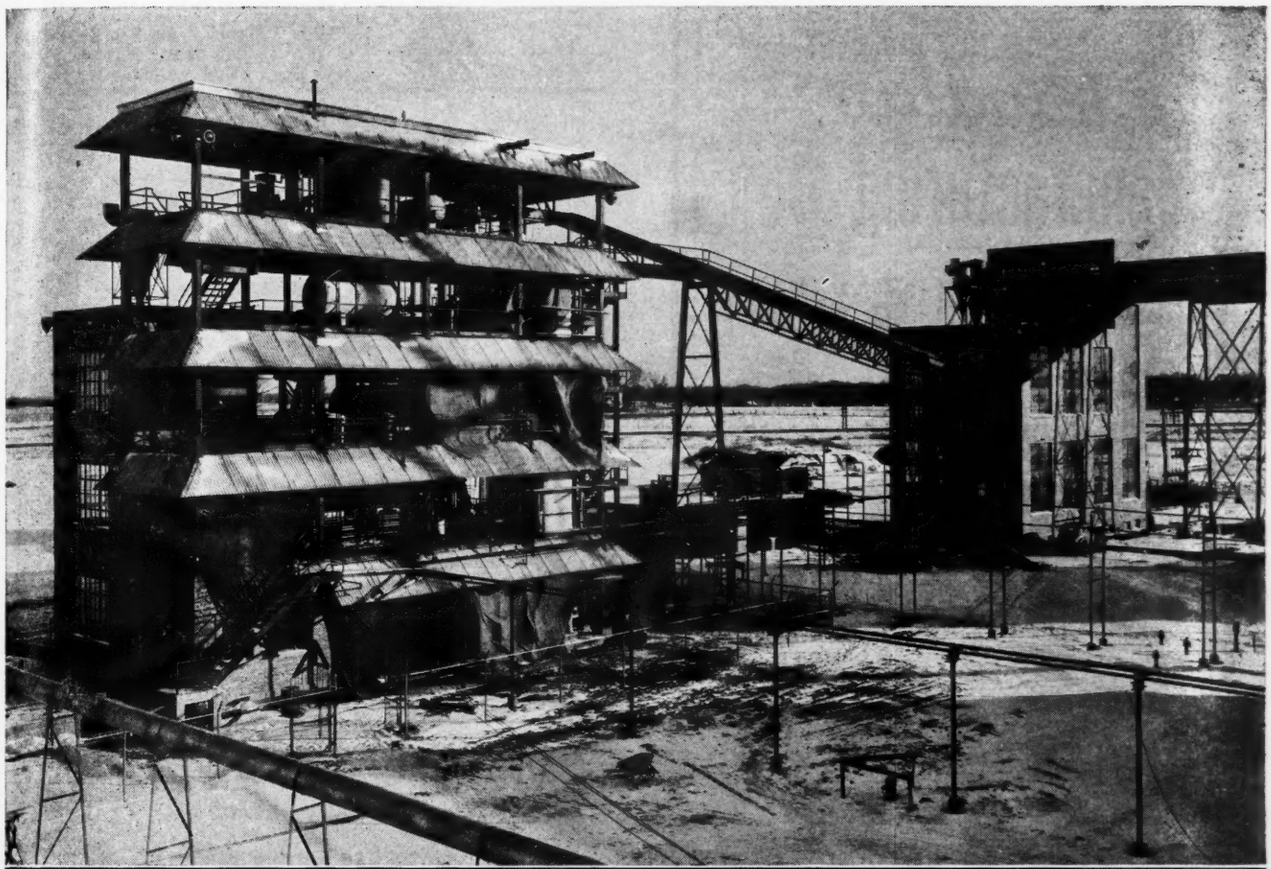
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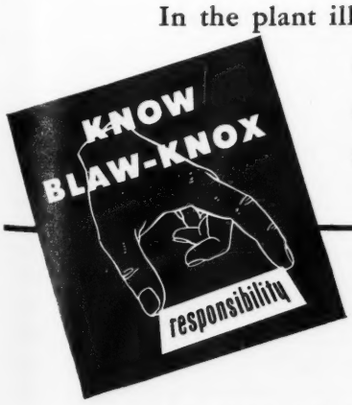


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In The MARKETS

• MORE OILS BUT LESS ANIMAL FATS. More vegetable and marine oil, and somewhat smaller supplies of animal fats are in prospect for the world at large and also for the United States according to a survey of world food supplies, made when crop prospects in the northern hemisphere were fairly well evident, and published by the U. S. Department of Agriculture.

The office of Foreign Agricultural Relations reports that the Philippine copra industry is moving along at a fast rate and that exports are picking up rapidly. The recent agreement of the Netherlands East Indies to sell its coconut oil to the United States indicates an increase in supplies from this important producing area.

Supplies of sunflowerseed oil in Argentina are larger than a year ago and larger olive oil crops are in prospect in Europe.

Manchuria's soybean prospects are reported favorable, and production may run as high as 85 percent of average. There are some carryover stocks, but it may prove difficult to move these to seaboard, and there are exchange difficulties and political uncertainties.

World butter production has declined with the expansion and consumption of other dairy products, the survey indicates.

Total exports of fats, oils and oilseeds from principal producing countries in terms of oil or fat equivalent are estimated for 1946 at 2,990,000 short tons, compared with the 1935-39 average of 6,511,000 short tons. The world's import requirements for fats and oils in 1946, however, are about double the supply for export.

• ANALYSIS OF SOYBEAN PRODUCTS. A summary by Woodson-Tenent Laboratories for August.

Average Chemical Analyses of Soybeans Grown in Tennessee, Arkansas, Mississippi, Missouri

	Oil (Oil calculated to 14% moisture)	Oil Yields per bushel
	%	lbs.
Average	17.5	8.0
Month's highest	20.0	9.6
Month's lowest	16.1	7.1

Average Chemical Analyses of Soybeans Grown in Minnesota, Wisconsin, Michigan, Ohio, Indiana, Illinois, Iowa, Kentucky, Virginia, Kansas, Nebraska

	Oil (Oil calculated to 14% moisture)	Oil Yields per bushel
	%	lbs.
Average	17.4	8.0
Month's highest	19.4	9.2
Month's lowest	15.2	6.5

Soybean Oil Meal—Average of All Soybean Oil Meal Analyses

	Moisture	Oil	Protein	Standard
	%	%	%	
Average	12.76	4.75	43.06	57
Month's best	12.04	4.30	43.69	51

Anaylses of Soybean Oil

	F.F.A.	Gardner Break	Moisture & Volatile	Refining Loss	Color (red)
	%	%	%	%	%
Average	0.8	0.87	0.12	6.0	9.0
Month's best	0.5	0.43	0.06	6.0	9.0

• SOYBEAN INSPECTIONS. Inspected receipts of soybeans decreased seasonally in August and totaled only 1,515 cars compared with 1,831 cars in July, according to reports to the grain branch of the Production and Marketing Administration. The average for the month of August for the crop year 1940-44 was 1,103 cars. Inspected receipts for October through August this season were 83,882 cars compared with 82,979 for the same period last season.

The quality of soybeans inspected October through August this season was slightly higher than that of the previous season. Ninety-one percent graded No. 2 or better compared with 88 percent for the corresponding period last year.

August inspections included the equivalent of about 27 cars inspected as truck receipts.

• COMMERCIAL SOYBEAN STOCKS. Production and Marketing Administration's commercial grain stock report.

U. S. Soybeans in Stock and Afloat at Domestic Markets (1,000 Bu.)

	Sept.3	Sept.10	Sept.17	Sept.24	Oct.1
Atlantic Coast	4	6	60	60	61
Gulf Coast	9	9	9	16	9
Northwestern and Upper Lake	57	32	14	1	1
Lower Lake	209	166	124	86	64
East Central	159	107	71	51	9
West Central Southwestern & Western	92	87	45	38	13
Total current week	530	407	323	252	157
Total Year ago	1,353	1,217	1,078	882	815

• STANDARD SHORTENING SHIPMENTS. By members of Institute of Shortening Mfgrs., in pounds.

September 7	4,433,129
September 14	7,081,569
September 21	7,772,453
September 28	5,142,327

Government Orders

• CUBAN WAIVER ON EDIBLE OILS. The Cuban government has extended the waiver of duties, consular fees and import taxes on imported vegetable oils, except peanut oil, until December 31. A decree of April had waived the duty on all edible vegetable oils and oilseeds until June 30 in order to aid the importation of soybean oil from the United States and of other oleaginous commodities that could be sold within local ceiling prices.

This decision will chiefly benefit importers of United States soybean oil as it was found under the earlier decree that no other oil, except a little olive oil, was obtainable from foreign sources. Duties, taxes, and fees on refined oil from the United States amount to only 1.4 cents a pound, but those on cottonseed and soybean oil from other countries amount to about 2 cents a pound.

Cuban imports of fats and oils during the first six months of 1946 were around 45 million pounds, compared with approximately 40 million pounds during the same period in 1945.

June soybean oil imports, 2.7 million pounds, were the best for any month during 1946 owing to the resumption of tank car service, which made possible the shipment of oil awaiting transport from the United States.

CUBAN IMPORTS OF SOYBEAN OIL
1,000 Pounds

Average 1936-1940	9,990	1945 a/	13,432
1941	7,330	1945 January to June a/	5,142
1942	8,170	1946 January to June a/	b/5,749
1943 a/	15,710		
1944 a/	2,615		

Official sources through 1942. a/ Preliminary and unofficial. b/ Gross weight.

• 1946-CROP SOYBEAN PROGRAM. Details of the 1946-crop soybean loan and purchase program calling for a support price to all farmers of $2.04 per net bushel for green and yellow soybeans grading U.S. No. 2, 14 percent moisture basis, were announced September 25 by the U.S. Department of Agriculture. Premiums and discounts for soybeans will be the same as in 1945.

Loans will be made by the Commodity Credit Corporation to farmers at rates equal to the support prices to producers for soybeans of any class having a moisture content not in excess of 14 percent, grading No. 4 or better with respect to all grade factors, and stored on farms in approved storage facilities.

Where adequate markets are not otherwise provided, county agricultural conservation committees will be authorized to purchase soybeans from producers at the support prices for the account of the Commodity Credit Corporation.

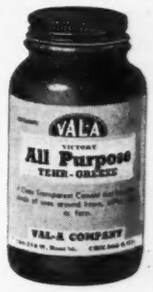
Lending agency agreements will be available to soybean processors under which they may obtain financing for soybeans purchased at support prices.

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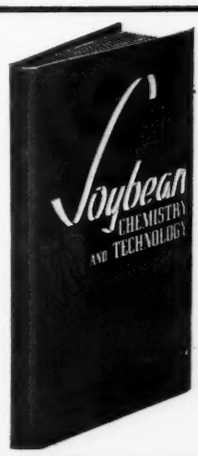
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